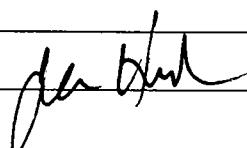


Attachment 1: 2002 Daily Operations Logs

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

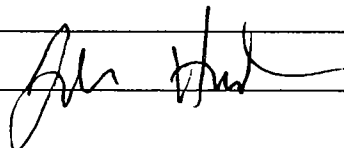
Date: 29 Jul 04	Chief Scientist/Shift Leader: Hardin	Project #: G005001, G005002, G004974
Start Time (local): 0700	Stop time (local): 1855	
Sampling Area(s): Northstar		
Weather Conditions: clear - pty cloudy, 5-15 kts winds NE, seas 1-2 ft		
Sampling Activities (by Station): N11, N12 + N13 - Deploy + retrieve Amphipod traps		
N04 - N05, N06 - Deploy mussels + SPMDs		
Organized equipment in AM - loaded vessel (mussel equipment) Deployed traps + mussels in PM		
Comments: placed 40 mussels in one trap on each mooring		
Placed 2 spmds in two cages (4 total spmds) on each mooring		
Field Personnel: Mark Mertz, TEG - Captain		
John Hardin + Mike Walsh - Battelle		
Greg Delfosse - FIT		
Gary Lowley - KLI		
Health and Safety Issues: None		
Signature: 		
Date: 29 Jul 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

Date: 30 Jul 04	Chief Scientist/Shift Leader: Hardin	Project #: G005001, G005002, G004974
Start Time (local): 0630	Stop time (local): 2118	
Sampling Area(s): East of Endicott (BSMP) LtxH		
Weather Conditions: Foggy - 5-10 kts - seas 1-2 ft		
Sampling Activities (by Station):		
Deploy Mussels-SPNDs @ 5H		
" " " " LOG		
" " " " 3A		
Collect sed + water @ 3A		
collect sed @ 3B		
Comments: Load equipment + supplies		
Load moorings -		
Transit to Endicott - P.U. Grab, Gary + Mike		
Transit to 5H - Deploy Mussels/SPND mooring		
Hydraulic leak @ LOG - ~1.5 hrs to repair		
Deploy LOG mooring, Deploy 3A mooring - collect sed + water		
Field Personnel: @ 3A, collect sed @ 3B		
→ John Trefry, John Hardin, Mike Walsh, Mark Nertz, Gary Lawley		
Health and Safety Issues: None		
Signature: 		Date: 30 July 04

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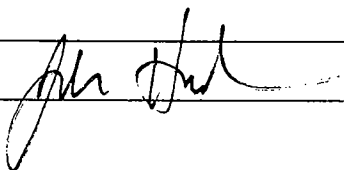
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Summer 2004 Daily Operations Log

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

Date: 1 Aug 04	Chief Scientist/Shift Leader: Hardin	Project #: G005001, G005002, G004974
Start Time (local): 0600	Stop time (local): 1200	
Sampling Area(s):		
Weather Conditions: winds 30+ kts, seas > 4ft, gusts > 35 kts		
Sampling Activities (by Station): No vessel sampling. Transit to beach for elevation/erosion mapping. Rain & wind too great, GPS not designed for rain - no sampling in morning		
Comments: Sampling by vessel not possible due to weather.		
Field Personnel: Delfosse, Hardin, Trocine, Walsh		
Health and Safety Issues: None -		
Signature: 	Date: 1 Aug 04	

Summer 2004 Daily Operations Log

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

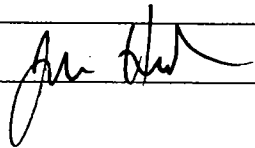
Date: 3 Aug 04	Chief Scientist/Shift Leader: Hardin	Project #: G005001, G005002, G004974
Start Time (local): 0630	Stop time (local): 1745	
Sampling Area(s): BSNP, Liberty		
Weather Conditions: 5-10 kts in am - seas light, E direction		
Sampling Activities (by Station): 5(0) - Deploy amphipods, sediment.		
5(0) 4B Sediment, 4A Sediment + amphipods; 5(5) Sediment + water, 4C - Sediment, C17 Sediment + water		
C18 Sediment		
Comments: Anchor lost @ 5(5), fouled by ice. Anchor line cut to free vessel.		
Field Personnel: Hardin, Delfosse, Labley, Merts, Tretry, Walsh		
Health and Safety Issues: Anchor fouled by ice required cutting loose.		
Signature: [Signature]	Date: 3 Aug 04	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

Date: 4 Aug 04	Chief Scientist/Shift Leader: Hardin	Project #: G005001, G005002, G004974
Start Time (local): NA	Stop time (local): NA	
Sampling Area(s):		
Weather Conditions: wind 25-35 kts, seas 2-6 ft		
Sampling Activities (by Station):		
winds 25-35 kts, high seas. Sampling not attempted. Transited to Endicott to check on 1273 and sea conditions		
Comments:		
Field Personnel: Hardin, Walsh, Tretry, Cowley, Mertz		
Health and Safety Issues: High wind + seas caused cancellation of sampling		
Signature: 	Date: 4 Aug 04	

Summer 2004 Daily Operations Log

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Summer 2004 Daily Operations Log

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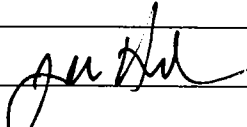
MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

Date: 7 Aug 04	Chief Scientist/Shift Leader: Trefry	Project #: G005001, G005002, G004974
Start Time (local): 1100	Stop time (local): 1800	
Sampling Area(s): Northstar, & KO water		
Weather Conditions: 0-5 F Ts-E ; calm seas		
Sampling Activities (by Station): N06, sediment. N18-receiver lost amphipod trap (no amphipods); PB-1 water; N16 sed, N03 sed, N02 sed; N05 sed; KO water		
Comments:		
Field Personnel: Waltz, Mertz, Trefry		
Health and Safety Issues: None		
Signature: [Signature] (for Mike Alilsh) Date: 20 Aug 04		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

Date: 7 Aug 04	Chief Scientist/Shift Leader: Hardin	Project #: G005001, G005002, G004974
Start Time (local): 0800	Stop time (local): 1730	
Sampling Area(s): Point Brauer Fish & Stump Island Fish		
Weather Conditions: 0-10kts wind, calm seas		
Sampling Activities (by Station): collect fish - remove net from Point Brauer, sample fish @ STP, SET NET @ Stump Island.		
Comments:		
Field Personnel: Hardin/Laurey @ P.B.; Hardin, Laurey, Deffore @ Stump Island		
Health and Safety Issues: None		
Signature: 	Date: 7 Aug 04	

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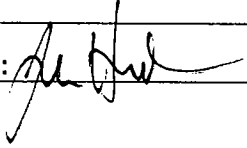
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Summer 2004 Daily Operations Log

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

Date: 8 Aug 04	Chief Scientist/Shift Leader: Hardin	Project #: G005001, G005002, G004974
Start Time (local): 0700	Stop time (local): 1730	
Sampling Area(s): Northstar - BSMP		
Weather Conditions: Pky Cloudy - winds 0-5 kts, seas calm		
Sampling Activities (by Station): Northstar - set 2 Fishtraps adjacent to Northstar - NW corner, set Amphipod traps @ N03 + Sediment		
N01 - sed + water		
N2 - water, 5 (N) water-sediment, 5 (S) sediment, S2 water		
S0 sediment		
Comments:		
Field Personnel: Prentki, Hardin, Trefny, Thorne, Alkire, Mertz		
Health and Safety Issues: None		
Signature: 	Date: 8 Aug 04	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

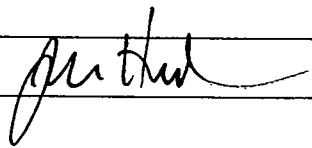
Date: <u>9 Aug 04</u>	Chief Scientist/Shift Leader: <u>Hardin</u>	Project #: <u>G005001</u> , <u>G005002</u> , <u>G004974</u>
Start Time (local): <u>0700</u>	Stop time (local): <u>1900</u>	
Sampling Area(s): <u>Northeast, BSMP</u>		
Weather Conditions: <u>075 kts, 8 - calm seas in am</u>		
Sampling Activities (by Station): <u>N04 - sediment, amphipods; 5B sed; 5E sed;</u> <u>5B amphipods; 5A sed; N06 - LV water; N13 sed; N21 sed;</u> <u>N15 sed; 5F sed + clams; N14 sed</u>		
Comments:		
Field Personnel: <u>Hardin, Mertz, Preutki, Trefny</u>		
Health and Safety Issues: <u>None</u>		
Signature: <u>[Signature]</u>	Date: <u>9 Aug 04</u>	

Summer 2004 Daily Operations Log

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

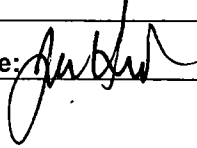
Date: 10 Aug 04	Chief Scientist/Shift Leader: Walsh	Project #: G005001, G005002, G004974
Start Time (local): 1441	Stop time (local): 1502	
Sampling Area(s): Northstar N05		
Weather Conditions: wind 5-10 Kts from the West / seas calm		
Sampling Activities (by Station): N05 SPMD / mussels / water station		
Collected 50 ^{min} 20 Litre Cubitainers for filtration.		
Comments: Ship samples in AM; Move Vessel to east side of West Dock, re-fuel 200 gal. + water		
Field Personnel: Walsh, Mertz, Alkine		
Health and Safety Issues: none		
Signature: 		Date: 20 Aug 04

Summer 2004 Daily Operations Log

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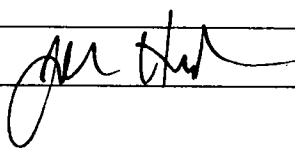
MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

Date: 12 Aug 04	Chief Scientist/Shift Leader: Hardin	Project #: G005001, G005002, G004974
Start Time (local): 0700	Stop time (local):	
Sampling Area(s): Tigvariak, BSMP		
Weather Conditions: wind S-Wets Am East - seas 4ft @ shelter		
Sampling Activities (by Station): Tigvariak - collect fish from fyke net		
release 2 stickleback, 2 small char.		
- 3A - Clams,		
- Re-sample net @ 1700		
Comments:		
Field Personnel: Hardin, Cawley, Mertz, Walsh		
Health and Safety Issues:		
Signature: 		
Date: 12 Aug 04		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

Date: 13 Aug 04	Chief Scientist/Shift Leader: Hardin	Project #: G005001, G005002, G004974
Start Time (local): 0800	Stop time (local): 2350	
Sampling Area(s): BSMP, Liberty		
Weather Conditions: Rain (Light), wind S+10 kts, South		
Sampling Activities (by Station): 3A - Retrieve Mooring (Gausse/1+SPMD)		
Set Amphipod traps @ L17 + L18		
Retrieve Mooring @ L06		
Collect Fishtrawls @ L14 (5 trawls)		
Collect LV water @ L06		
Retrieve Amphipods @ L17		
Weather picks up - Transit to Endicott. + Anchor		
Filter LV water → 2350		
Comments: - seas pick up to 2-3 ft - 20+ kts wind (E)		
Field Personnel: Hardin, Lawley, Mertz, Har Walsh		
Health and Safety Issues: None		
Signature: 	Date: 14 Aug 04	

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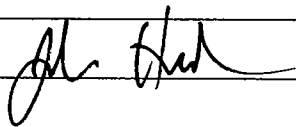
MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

Date: 14 Aug 04	Chief Scientist/Shift Leader: Hardin	Project #: G005001, G005002, G004974
Start Time (local): 0830	Stop time (local): 1450 (vessel)	
Sampling Area(s): Liberty / BSMP		
Weather Conditions: 5-10 kts - S		
Sampling Activities (by Station):		
Retrieve 5th Mowing (mussels + SPMs)		
L17 - recover amphipod trap - too few organisms for sample		
Comments:		
Field Personnel: Hardin, Canley, Mertz, Walsh		
Health and Safety Issues: None		
Signature: [Signature]		Date: 14 Aug 04

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cAnimida)

Summer 2004 Daily Operations Log

Date: 15 Aug 04	Chief Scientist/Shift Leader: Hardin	Project #: G005001 G005002 G004974
Start Time (local): 0700	Stop time (local): 1600	
Sampling Area(s): Northstar		
Weather Conditions: clear - winds 0-5 kts		
Sampling Activities (by Station): Retrieve moorings from N04, N05, + N06.		
Trawl @ N25		
collect LV water @ N04		
Comments: very minimal fish caught by trawl @ N25.		
Field Personnel: Hardin, Lawley, Mertz, Walsh		
Health and Safety Issues: None		
Signature: 	Date: 15 Aug 04	

Attachment 2: 2002 Station Logs

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <i>N13</i>	Date: <i>29 Jul 04</i>	Depth: <i>1416</i> Time (local): <i>1740</i>	Project #: G005001 (<i>G005002</i>) G004974	
Recorder: <i>Hardin</i>	Sampling Location (circle one): BSMP / <i>Northstar</i> / Liberty / Other			
Latitude (WGS84) <i>70° 26.984</i>		Longitude (WGS84) <i>148° 43.612</i>		
Field Observations and Measurements				
Wind Speed (kts): <i>5-10</i>	Wind Direction: <i>NE</i>	Seas/Ice: <i>Seas 1-2 ft</i> <i>off Northstar ~ 3-5 miles</i>		
Water Depth (ft): <i>12</i>	Conductivity, Temperature, Depth (CTD): <i>—</i>			
Doppler Current: <i>—</i>	Turbidity: <i>—</i>	Instrument Tow: <i>—</i>		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): <i>>50% silt/clay</i> Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed: <i>1</i>	Traps Retrieved: <i>1</i>	Anonyx: <i>2/50 cc</i>	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments: <i>Traps soaked for 3:24</i>				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <i>Hardin, Walsh, Mertz, DeHesse</i>				
Signature: <i>[Signature]</i>		Date: <i>29 Jul 04</i>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N12	Date: 29 Jul 04	Deployment Time (local): 1435 1733	Project #: G005001, G005002, G004974		
Recorder: Hardin		Sampling Location (circle one): BSMP / Northstar / Liberty / Other			
Latitude (WGS84) 70° 27.2950		Longitude (WGS84) 148° 42.1916			
Field Observations and Measurements					
Wind Speed (kts): 340	Wind Direction: NE		Seas/Ice: 5-12 ft OFF N. star 23-5 m, 15		
Water Depth (ft): 16.4	Conductivity, Temperature, Depth (CTD):				
Doppler Current: —	Turbidity: —		Instrument Tow: —		
Comments:					
Sediment Samples					
Device: Van Veen Grab Other-			No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C	Methyl Hg
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed					
Indications of Anoxia: Yes No			H ₂ S Odor: Yes No		
Sediment Comments:					
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other					
Large Volume Water Samples: Replicate 1 Replicate 2					
Volume filtered/processed (liters)		XAD Cartridge		Pleated Filter	
LV Water Comments:					
Biota					
Amphipods	Traps Deployed: 1	Traps Retrieved: 1		Anonyx: 2 150 ml	
Clams	Number of Grabs:	Astarte:		Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:		Mussels:	SPMD:
Biota Comments:					
Quality Control Samples					
Field Blank	Equipment Blank		Trip Blank		Other
Overall Comments:					
Field Personnel:					
Hardin, Walsh, Mertz, Lawley, DeBosse					
Signature: [Signature]				Date: 29 Jul 04	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>N-11</u>	Date: <u>29 Jul 04</u>	Time (local): <u>1518</u>	Project #: G005001 (<u>G005002</u>) G004974	
Recorder: <u>Hardin</u>		Sampling Location (circle one): BSMP / <u>Northstar</u> / Liberty / Other		
Latitude (WGS84) <u>70° 28.4174</u>		Longitude (WGS84) <u>148° 42.9421</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>10-15</u>	Wind Direction: <u>NE</u>	Seas/Ice: <u>1-2 ft / 385 miles off N. Star</u>		
Water Depth (ft): <u>26</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed: <u>/</u>	Traps Retrieved: <u>/</u>	Anonyx: <u>~100 ml</u>	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments: <u>04-NH-01-PHC/MET-T-AN</u>				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Hardin, Walsh, Mertz, Lawley, Deffosse</u>				
Signature: <u>[Signature]</u>		Date: <u>29 Jul 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>N06</u>	Date: <u>29 Jul 04</u>	Time (local): <u>1530</u>	Project #: G005001, <u>G005002</u> , G004974	
Recorder: <u>Hardin</u>		Sampling Location (circle one): BSMP / <u>Northstar</u> / Liberty / Other		
Latitude (WGS84) <u>70°29.5749</u>		Longitude (WGS84) <u>148°43.2126</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>10-15</u>	Wind Direction: <u>NE</u>	Seas/Ice: <u>1-2 ft / 1cc 3-5 off N. star</u>		
Water Depth (ft): <u>37'</u>	Conductivity, Temperature, Depth (CTD): <u>—</u>			
Doppler Current: <u>—</u>	Turbidity: <u>—</u>	Instrument Tow: <u>—</u>		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed: <u>1</u>	Moorings Retrieved: <u>1</u>	Mussels: <u>(1)</u>	SPMD: <u>(2)</u>
Biota Comments: <u>Retrieved on 15 Aug @ 0840; 38 Mussels alive, 8 dead</u>				
Quality Control Samples (<u>Hardin, Lawley, Mertz, Walsh</u>)				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: <u>Pinger = 25 kHz</u>				
Field Personnel: <u>Hardin, Walsh, Mertz, Lawley, DeHosse</u>				
Signature: <u>[Signature]</u>		Date: <u>29 Jul 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 105	Date: 29 Jul 04	Time (local): 1620	Project #: G005001, G005002 , G004974	
Recorder: Hardin		Sampling Location (circle one): BSMP Northstar / Liberty / Other		
Latitude (WGS84) 70° 29.6324		Longitude (WGS84) 148° 44.7688		
Field Observations and Measurements				
Wind Speed (kts): 1045	Wind Direction: NE	Seas/Ice: 1-2 / 3-5 off N. Star		
Water Depth (ft): 37'	Conductivity, Temperature, Depth (CTD): —			
Doppler Current: —	Turbidity: —	Instrument Tow: —		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge		Pleated Filter	TSS
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed: 1	Moorings Retrieved: 1	Mussels: (1)	SPMD: (2)
Biota Comments: Retrieved @ 0928 on 15 Aug 39 mussels, alive, 1 dead				
Quality Control Samples (Hardin, Lawley, Mertz, Walsh)				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: Pinger = 32 kHz				
Field Personnel: Hardin, Walsh, Mertz, Lawley, Retfoss				
Signature: [Signature]		Date: 29 Jul 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

(Retrieve on 15 Aug 04)

Station ID: N04	Date: 29 Jul 04	Time (local): 1643	Project #: G005001, G005002 , G004974	
Recorder: Hardin		Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 29.6735		Longitude (WGS84) 148° 48.1265		
Field Observations and Measurements				
Wind Speed (kts): 10-15	Wind Direction: NE	Seas/Ice: 6-7 ft / ice 3-5 mile from Northstar		
Water Depth (ft): 40'	Conductivity, Temperature, Depth (CTD): —			
Doppler Current: —	Turbidity: —	Instrument Tow: —		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed: 1	Moorings Retrieved: 1	Mussels: (1)	SPMD: (2)
Biota Comments: Finger = 37 kHz RETRIEVED @ 1013 ON 15 Aug 04				
Quality Control Samples 41 mussels alive; 8 dead.				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Hardin, Lawley, Mertz, Walsh, Oelbosse (29 Jul)				
Hardin, Lawley, Mertz, Walsh 15 Aug 04				
Signature: [Signature]		Date: 29 Jul 04		
		15 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 5H	Date: 30 Jul 04	Time (local): 1300	Project #: G005001, G005002, G004974	
Recorder: Hardin	Sampling Location (circle one): BSMP / Northstar / Liberty / Other <i>JA</i>			
Latitude (WGS84) 70° 22.2318		Longitude (WGS84) 147° 47.7870		
Field Observations and Measurements				
Wind Speed (kts): 5-10	Wind Direction: NE	Seas/Ice: 0-1 / ICE-1-2 m. ice/w.		
Water Depth (ft): 22'	Conductivity, Temperature, Depth (CTD): —			
Doppler Current: —	Turbidity: —	Instrument Tow: —		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed: 1	Moorings Retrieved: 1	Mussels: (1)	SPMD: (2)
Biota Comments: 34 kHz pinger - 38 mussels Alive (2 jars) & Dead				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: Retrieved mooring - 14 Aug 04 - 1000 - new location				
04-5H-01-PHC/MET-T-MU = Mussel				
04-5H-01-PHC-SPMD & 04-5H-02-PHC-SPMD				
Field Personnel: Trefry, Lawley, Hardin, Walsh, Mertz				
Signature: <i>JA</i> Date: 30 July 04				

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>LO6</u>	Date: <u>30 Jul 04</u>	Time (local): <u>1610</u>	Project #: G005001, <u>G005002</u> , G004974	
Recorder: <u>Hardin</u>		Sampling Location (circle one): BSMP / Northstar <u>Liberty</u> / Other		
Latitude (WGS84) <u>70° 16.9253</u>		Longitude (WGS84) <u>147° 34.0582</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>NE</u>	Seas/Ice: <u>0-1 / ice 2 miles N</u>		
Water Depth (ft): <u>20'</u>	Conductivity, Temperature, Depth (CTD): <u>—</u>			
Doppler Current: <u>—</u>	Turbidity: <u>—</u>	Instrument Tow: <u>—</u>		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed: <u>1</u>	Moorings Retrieved: <u>1</u>	Mussels: <u>(1)</u>	SPMD: <u>(2)</u>
Biota Comments: <u>Retrieved all 4 mussels alive, 20 per jar. 4 SPMDs - 2 per jar</u>				
Quality Control Samples <u>Retrieved 13 Aug 04 @ 1510 - on location</u>				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Hardin, Trefry, Mertz, Lawley, Walsh</u>				
Signature: <u>[Signature]</u>		Date: <u>30 Jul 04</u>		

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Summer 2004 Station Log

Station ID: 3A	Date: 30 Jul 04	Time (local): 1745	Project #: G005001, G005002, G004974	
Recorder: Hardin	Sampling Location (circle one): BSMP / Northstar / Liberty / Other PH			
Latitude (WGS84) 70° 16.9306		Longitude (WGS84) 147° 05.4467		
Field Observations and Measurements				
Wind Speed (kts): 0-5	Wind Direction: NE	Seas/Ice: 0-1 / 1/2 mile N		
Water Depth (ft): 17	Conductivity, Temperature, Depth (CTD): — chunk, present			
Doppler Current: —	Turbidity: —	Instrument Tow: —		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed: 1	Moorings Retrieved: 1	Mussels: (1)	SPMD (2)
Biota Comments: 37 kHz pinger				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: Moorings retrieved on 13 Aug @ 1115				
04-3A-01-PHC/MET-T-MU - mussels N=20 per jar & dead				
04-3A-01-PHC-SPMD & 04-3A-02-PHC-SPMD; 1=top 2=bottom				
Field Personnel: Metz, Treff, Hardin, Walsh, Lawley				
Signature: [Signature]			Date: 30 Jul 04	

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Summer 2004 Station Log

Station ID: 3A	Date: 30 July 04	Time (local): 1830	Project #: G005001 G005002 G004974	
Recorder: Hardin	Sampling Location (circle one): BSMP / Northstar / Liberty / Other PH			
Latitude (WGS84) 70° 16.9327		Longitude (WGS84) 147° 05.4570		
Field Observations and Measurements				
Wind Speed (kts): 0-5	Wind Direction: NE	Seas/Ice: 0-1 / ice 0.1 miles		
Water Depth (ft): 18	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-3A-01-PHC-S	☒	☒	☒	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments: Light Brown - stiff clay under ~ 2m				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Trefry, Walsh, Hardin, Mertz, Cawley				
Signature: [Signature]		Date: 30 Jul 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 3B	Date: 30 Jul 04	Time (local): 1847	Project #: G005001 G005002, G004974	
Recorder: Hardin		Sampling Location (circle one) BSMP Northstar / Liberty / Other 94		
Latitude (WGS84) 70° 17.9035		Longitude (WGS84) 147° 02.5445		
Field Observations and Measurements				
Wind Speed (kts): 0-5	Wind Direction: NE	Seas/Ice: 01 / Ice on NE side of Island		
Water Depth (ft): 13	Conductivity, Temperature, Depth (CTD): Island			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-3B-01-PHC-5	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments: Light Brown - Firm clay (not very stiff) ~ 3 cm deep → 1A				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Mertz, Hardin, Tietry, Walsh, Cawley				
Signature: [Signature]		Date: 30 July 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

1st Amphipod trap in

Station ID: <u>LO4</u>	Date: <u>2 Aug 04</u>	Time (local): <u>0900</u>	Project #: <u>G005001</u> , <u>G005002</u> , <u>G004974</u>		
Recorder: <u>Hardin</u>		Sampling Location (circle one): BSMP / Northstar / <u>Liberty</u> / Other			
Latitude (WGS84) <u>70° 17.0616 (1)</u> <u>70° 17.0560 (2)</u>		Longitude (WGS84) <u>147° 40.0326</u> <u>147° 40.0821</u>			
Field Observations and Measurements <u>560-70° 17.0604 147° 40.0976</u>					
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>SW</u>	Seas/Ice: <u>0-1 ft / No Ice</u>			
Water Depth (ft): <u>14</u>	Conductivity, Temperature, Depth (CTD): <u>✓</u>				
Doppler Current: <u>✓</u>	Turbidity: <u>✓</u>	Instrument Tow:			
Comments:					
Sediment Samples <u>Sediment sample @ 0920</u>					
Device: <u>Van Veen Grab</u> Other-		No. of Replicates <u>1</u>			
Organics	Metals	Grain Size	TOC	¹³ C	Methyl Hg
<u>04-LO4-01-PHC-S</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>		
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> Fine Coarse Sand Gravel Shell Hash Mixed					
Indications of Anoxia: Yes <u>(No)</u>			H ₂ S Odor: Yes <u>(No)</u>		
Sediment Comments: <u>Light Brown - med. firm clay ~ 2cm</u>					
Water/Suspended Sediment Samples: <u>(Surface) 0.5</u> <u>1</u> Mid-Water <u>1.5</u> <u>2.5</u> Bottom <u>8 m</u> Other					
Large Volume Water Samples: Replicate 1 Replicate 2					
Volume filtered/processed (liters)		XAD Cartridge		Pleated Filter	TSS
LV Water Comments:					
Biota <u>2nd Amphipod in @ 0905</u>					
Amphipods	Traps Deployed: <u>2</u>	Traps Retrieved: <u>2</u>	Anonyx: <u>~ 180 ml</u>		
Clams	Number of Grabs:	Astarte:	Cyrtodaria:		
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:	
Biota Comments: <u>04-LO4-01-PAC/MET-AN</u> / <u>one trap ~ 160 ml, one trap ~ 20 ml</u>					
Quality Control Samples					
Field Blank	Equipment Blank	Trip Blank	Other		
Overall Comments: <u>Traps recovered @ 1505</u>					
Field Personnel: <u>Mertz, Trefry, Trucine, Walsh, Hardin</u>					
Signature: <u>[Signature]</u>				Date: <u>2 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>601</u>	Date: <u>2 Aug 04</u>	Time (local): <u>1100</u>	Project #: <u>G005001</u> , G005002, G004974	
Recorder: <u>Hardin</u>		Sampling Location (circle one): BSMP / Northstar / <u>Liberty</u> / Other		
Latitude (WGS84) <u>70° 17.9321</u>		Longitude (WGS84) <u>148° 40.0906</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>—</u>	Seas/Ice: <u><1ft / ice</u>		
Water Depth (ft): <u>19</u>	Conductivity, Temperature, Depth (CTD): <u>✓</u>			
Doppler Current: <u>✓</u>	Turbidity: <u>✓</u>	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u> Other-		No. of Replicates <u>1</u>		
Organics <u>04-601-01-PHC-5</u>	Metals <u>✓</u>	Grain Size <u>✓</u>	TOC <u>✓</u>	¹³ C
				Methyl Hg
				Other
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: <u>✓</u> Surface <u>1, 1.5, 2.5, 4</u> Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Mertz, Trefry, Truone, Walcott, Hardin</u>				
Signature: <u>[Signature]</u>		Date: <u>2 Aug 04</u>		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>LCR</u>	Date: <u>2 Aug 04</u>	Time (local): <u>1207</u>	Project #: <u>G005001</u> , <u>G005002</u> , <u>G004974</u>	
Recorder: <u>Hardin</u>		Sampling Location (circle one): BSMP / Northstar / <u>Liberty</u> / Other		
Latitude (WGS84) <u>70° 16.5705</u>		Longitude (WGS84) <u>149° 27.2041</u> <u>147°</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>—</u>	Seas/Ice: <u><1ft / sparse ice flow</u>		
Water Depth (ft): <u>19.7</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u> Other-		No. of Replicates <u>1</u>		
Organics	Metals	Grain Size	TOC	¹³ C
<u>04-L09-01-PHC-S</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> <u>Fine</u> Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes <u>No</u>		H ₂ S Odor: Yes <u>No</u>		
Sediment Comments: <u>SILT/CLAY/Fine sand top 1-2cm, fine sand packed >2cm</u>				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)		XAD Cartridge	Pleated Filter	TSS
LV Water Comments: <u>1 of 2 + 2 of 2</u>				
Biota <u>04-L09-01-PHC/MET-AS ; 04-L09-02-PHC/MET-AS DH</u>				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs: <u>8</u>	Astarte: <u>28 rep 1 15 rep 2</u>	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Mertz, Trefry, Trocine, Walsh, Hardin</u>				
Signature: <u>[Signature]</u>		Date: <u>02 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>L08</u>	Date: <u>2 Aug 02</u>	Time (local): <u>1248</u>	Project#: <u>G005001</u> <u>G005002</u> <u>G004974</u>	
Recorder: <u>Hardin</u>		Sampling Location (circle one): BSMP / Northstar / <u>Liberty</u> / Other		
Latitude (WGS84) <u>70° 16.7007</u>		Longitude (WGS84) <u>147° 30.3426</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>—</u>	Seas/Ice: <u><1ft / flake ice</u>		
Water Depth (ft): <u>192</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u> Other-		No. of Replicates <u>1</u>		
Organics <u>04-L08-01-PHC-5</u>	Metals <u>✓</u>	Grain Size <u>✓</u>	TOC <u>✓</u>	¹³ C
				Methyl Hg
				Other
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> <u>Fine</u> Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes <u>(No)</u>		H ₂ S Odor: Yes <u>(No)</u>		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota <u>04-L08-01-PHC/MCT-As 1st & 2nd</u>				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs: <u>13</u>	Astarte: <u>30 + 7 (2 jars)</u>	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Hardin, Trefry, Troche, Mertz, Walsh</u>				
Signature: <u>[Signature]</u>		Date: <u>2 Aug 02</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>L07</u>	Date: <u>2 Aug 04</u>	Time (local): <u>1400</u>	Project # <u>G005001</u> , G005002, G004974				
Recorder: <u>Hardin</u>		Sampling Location (circle one): BSMP / Northstar (<u>Liberty</u>) Other					
Latitude (WGS84) <u>70° 16.7760</u>		Longitude (WGS84) <u>147° 32.0016</u>					
Field Observations and Measurements							
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>E</u>	Seas/Ice: <u><1ft - Flow ice</u>					
Water Depth (ft): <u>20.4</u>	Conductivity, Temperature, Depth (CTD):						
Doppler Current:	Turbidity:	Instrument Tow:					
Comments:							
Sediment Samples							
Device: (<u>Van Veen Grab</u>) Other-	No. of Replicates <u>3 gtt 1</u>						
Organics <u>04-L07-01, 115-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000</u>	Metals <u>✓</u>	Grain Size	TOC	¹³ C	Methyl Hg	Other	
Sediment Texture (circle all that apply):		<u>>50% silt/clay</u>	<u>Fine</u>	Coarse Sand Gravel	Shell Hash	Mixed	
Indications of Anoxia: Yes <u>No</u>		H ₂ S Odor: Yes <u>No</u>					
Sediment Comments:							
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other							
Large Volume Water Samples: Replicate 1 Replicate 2							
Volume filtered/processed (liters)		XAD Cartridge		Pleated Filter		TSS	
LV Water Comments:							
Biota							
Amphipods	Traps Deployed:	Traps Retrieved:		Anonyx:			
Clams	Number of Grabs:	Astarte:		Cyrtodaria:			
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:		Mussels:		SPMD:	
Biota Comments:							
Quality Control Samples							
Field Blank	Equipment Blank	Trip Blank		Other			
Overall Comments:							
Field Personnel: <u>Hardin, Mertz, Trefry, Trocme, Walsh</u>							
Signature: <u>[Signature]</u>				Date: <u>2 Aug 04</u>			

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>606</u>	Date: <u>2 Aug 04</u>	Time (local): <u>1420</u>	Project #: <u>G005001</u> G005002, G004974	
Recorder: <u>Hardin</u>		Sampling Location (circle one): BSMP / Northstar / <u>Liberty</u> / Other		
Latitude (WGS84) <u>70° 16.9242</u>		Longitude (WGS84) <u>147° 34.0839</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>E</u>	Seas/Ice: <u><1ft / sparse floe ice</u>		
Water Depth (ft): <u>20.8</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u> Other-		No. of Replicates <u>3</u>		
Organics	Metals	Grain Size	TOC	¹³ C
<u>04-LOG-01,2,3-DHC-5</u> ✓	✓	✓	✓	
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> <u>Fine</u> Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes <u>No</u>		H ₂ S Odor: Yes <u>No</u>		
Sediment Comments: <u>3 REPLICATES collected (1) 1420 (2) 1430 (3) 1440</u>				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Trefry, Truxine, Mertz, Walsh, Hardin</u>				
Signature: <u>[Signature]</u>		Date: <u>2 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>5H</u>	Date: <u>2 Aug 04</u>	Time (local): <u>1550</u>	Project #: <u>G005001</u> <u>G005002</u> <u>G004974</u>	
Recorder: <u>Hardin</u>		Sampling Location (circle one): <u>BSMP</u> / Northstar / Liberty / Other		
Latitude (WGS84) <u>70° 22.2280</u>		Longitude (WGS84) <u>147° 47.8581</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>E</u>	Seas/Ice: <u>LIFF / NO ICE</u>		
Water Depth (ft): <u>22.0</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates <u>1</u>		
Organics	Metals	Grain Size	TOC	¹³ C
<u>04-5H-01-SHC-3</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
Sediment Texture (circle all that apply): <u>>50% silt/clay</u>		<u>Fine</u>	Coarse Sand Gravel	Shell Hash
Indications of Anoxia: Yes <u>(No)</u>		H ₂ S Odor: Yes <u>(No)</u>		
Sediment Comments: <u>Light Brown - stiff silt/clay sand ~2cm deep</u>				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota <u>04-5H-01-PHC/MET-AS</u>				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs: <u>41</u>	Astarte: <u>~150ml</u>	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments: <u>~1.5 hrs to collect sample - off station @ 1930 1730</u>				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Murtz, Trefry, Troche, Walsh, Hardin</u>				
Signature: <u>John Hardin</u>		Date: <u>2 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: EO	Date: 2 Aug 04	Time (local): 1810	Project #: G005001, G005002, G004974	
Recorder: Hardin		Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 23.0036		Longitude (WGS84) 148° 00.0271		
Field Observations and Measurements				
Wind Speed (kts): 6-5	Wind Direction: E	Seas/Ice: 4ft - no ice		
Water Depth (ft): 18.2	Conductivity, Temperature, Depth (CTD): ✓			
Doppler Current: ✓	Turbidity: ✓	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other ✓				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Hardin, Mertz, Trefry, Trucine, Walsh				
Signature: [Signature] Date: 2 Aug 04				

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

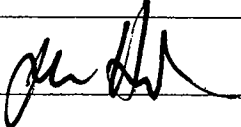
Station ID: 5(0)	Date: 3 Aug 04	Time (local): 0820	Project # G005001, G005002, G004974	
Recorder: Hardin	Sampling Location (circle one) BSMP / Northstar / Liberty / Other			
Latitude (WGS84) 70° 22.7435		Longitude (WGS84) 148° 00.385		
Field Observations and Measurements				
Wind Speed (kts): 5-10	Wind Direction: E	Seas/Ice: 4ft/noice		
Water Depth (ft):	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab	Other:	No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-5(0)-01-PHC-5 ✓	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay (circled), Fine (circled), Coarse Sand Gravel, Shell Hash, Mixed				
Indications of Anoxia: Yes (No) (circled)		H ₂ S Odor: Yes (No) (circled)		
Sediment Comments: Light Brown -				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed: 2	Traps Retrieved: 2	Anonyx: 2 reps	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments: 04-5(0)-01-PHC/met-AN; Second Rep 04-5(0)-02-PHC/met-AN				
Quality Control Samples Traps retrieved @ 1845				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: 2 reps for Anonyx, 1 Isopod sample				
Field Personnel: DeHesse, Hardin, Lowley, Mertz, Tretry, Uchish				
Signature: [Signature]		Date: 3 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 4B	Date: 3 Aug 04	Time (local): 0948	Project #: G005001, G005002, G004974	
Recorder: Hardin		Sampling Location (circle one) BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 21.0155		Longitude (WGS84) 147° 40.0320		
Field Observations and Measurements				
Wind Speed (kts): 5-10	Wind Direction: E	Seas/Ice: 4 ft - flow ice sparse		
Water Depth (ft): 19.8	Conductivity, Temperature, Depth (CTD): —			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-4B-01-PHC-5	☒	☒	☒	
Sediment Texture (circle all that apply): >50% silt/clay (Fine) Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes (No)		H ₂ S Odor: Yes (No)		
Sediment Comments: Light Brown - fine sand				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: DeLfosse, Hardin, Cawley, Mentz, ^{PH} French Tretry, Walsh				
Signature: 		Date: 3 Aug 04		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 4A	Date: 3 Aug 04	Time (local): 1017	Project #: G005001 , G005002 , G004974			
Recorder: Hardin		Sampling Location (circle one): BSMP / Northstar / Liberty / Other				
Latitude (WGS84) 70° 18.4539			Longitude (WGS84) 147° 40.2372			
Field Observations and Measurements						
Wind Speed (kts): 0-5		Wind Direction: E		Seas/Ice: 4 ft / FLOWICE		
Water Depth (ft): 14.3		Conductivity, Temperature, Depth (CTD): —				
Doppler Current:		Turbidity:		Instrument Tow:		
Comments:						
Sediment Samples						
Device: Van Veen Grab Other-			No. of Replicates 1 (4 attempts, 2 rejected)			
Organics	Metals	Grain Size	TOC	¹³ C	Methyl Hg	Other
04-4A-01-PHC-B	✓	✓	✓			
Sediment Texture (circle all that apply): >50% silt/clay (Fine) Coarse Sand Gravel Shell Hash Mixed						
Indications of Anoxia: Yes (No)			H ₂ S Odor: Yes (No)			
Sediment Comments: TAU Sediment 04H Five sand Brown stiff clay glbs - min. penetration						
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other						
Large Volume Water Samples: Replicate 1 Replicate 2						
Volume filtered/processed (liters)		XAD Cartridge		Pleated Filter		TSS
LV Water Comments:						
Biota						
Amphipods	Traps Deployed: 1	Traps Retrieved: 1		Anonyx: 3200 ml		
Clams	Number of Grabs:	Astarte:		Cyrtodaria:		
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:		Mussels:	SPMD:	
Biota Comments: Traps retrieval @ 1802						
Quality Control Samples						
Field Blank	Equipment Blank		Trip Blank		Other	
Overall Comments: - Two grabs used, one for metals, one for organics + TOC. Weight added to increase penetration						
Field Personnel: Delfosse, Hardin, Lawley, Meritz, Walsh, Trefry						
Signature: [Signature]				Date: 3 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 5(5)	Date: 3 Aug 04	Time (local): 12:50	Project #: G005001 , G005002, G004974	
Recorder: Hardin		Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 26.0820		Longitude (WGS84) 147° 18.0805		
Field Observations and Measurements				
Wind Speed (kts): 0-5	Wind Direction: E	Seas/Ice: 41 ft / much flurries		
Water Depth (ft): 68'	Conductivity, Temperature, Depth (CTD): ☒			
Doppler Current: ☒	Turbidity: ☒	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-5(5)-01-PHC-5	☒	☒	☒	
Sediment Texture (circle all that apply): >50% silt/clay		Fine	Coarse Sand	Gravel
Indications of Anoxia: Yes ☒ No		H ₂ S Odor: Yes ☒ No		
Sediment Comments: Some stiff clay - gravel				
Water/Suspended Sediment Samples:				
Surface ☒		Mid-Water ☒	Bottom ☒	Other ☒
Large Volume Water Samples:				
Replicate 1		Replicate 2		
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Delfosse, Hardin, Lowley, Mertz, Trefry				
Signature: [Signature]		Date: 3 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 4C	Date: 3 Aug 04	Time (local): 1507	Project # G005001, G005002, G004974	
Recorder: Hardin	Sampling Location (circle one): BSMP Northstar / Liberty / Other			
Latitude (WGS84) 70° 26.0898		Longitude (WGS84) 147° 42.9757		
Field Observations and Measurements				
Wind Speed (kts): 10-15	Wind Direction: E	Seas/Ice: clft / flow ice sparse		
Water Depth (ft): 26.6	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
04-4C-01-PHC-S	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes (No)		H ₂ S Odor: Yes (No)		
Sediment Comments: lt Brown - some silt/clay on surface - appears mostly				
Water/Suspended Sediment Samples: Surface ✓ Mid-Water ✓ Bottom Fine Sand. other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: DeFosse, Hardin, Lawley, Mertz, Trefry, Walsh				
Signature: [Signature]		Date: 3 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>L17</u>	Date: <u>3 Aug 04</u>	Time (local): <u>1507¹⁶⁰⁰h</u>	Project #: <u>G005001</u> , G005002, G004974	
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / Northstar / <u>Liberty</u> / Other			
Latitude (WGS84) <u>70° 23.6088</u>		Longitude (WGS84) <u>147° 32.9282</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>5-10</u>	Wind Direction: <u>E</u>	Seas/Ice: <u>Lf / Flawice sparse</u>		
Water Depth (ft): <u>22.5</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u>	Other-	No. of Replicates <u>1</u>		
Organics	Metals	Grain Size	TOC	¹³ C
<u>04-L17-01-PHC-S</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> <u>Fine</u> Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes <u>(No)</u>		H ₂ S Odor: Yes <u>(No)</u> <u>(silt/clay)</u>		
Sediment Comments: <u><50% silt/clay Lt. Brown, = thin coat of fine material</u>				
Water/Suspended Sediment Samples: <u>✓</u> Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
<u>✓</u> Water Comments: <u>surf, 1, 2.5, 4 & 6 m water samples</u>				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>DeFosse, Hardin, Lawky, Mente, Treffys, Walsh</u>				
Signature: <u>[Signature]</u>			Date: <u>3 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

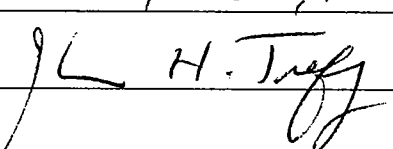
Station ID: L18	Date: 3 Aug 04	Time (local): 1820	Project #: G005001 , G005002, G004974	
Recorder: Hardin		Sampling Location (circle one): BSMP / Northstar Liberty / Other		
Latitude (WGS84) 70° 18.3738		Longitude (WGS84) 147° 45.6664		
Field Observations and Measurements				
Wind Speed (kts): 10-15	Wind Direction: E	Seas/Ice: 1-3 ft / sparse flurries		
Water Depth (ft): 13	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-L18-01-P HG-5	☒	☒	☒	
Sediment Texture (circle all that apply): >50% silt/clay Fine Sand Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments: Light Brown - soft silt/clay				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge		Pleated Filter	TSS
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Beltfoss, Hardin, Lowley, Menzies, Trefry, Walsh				
Signature: [Signature]		Date: 3 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: E01 ^{E1} 98	Date: 8-5-04	Time (local): 0900	Project #: G005001, G005002, G004974		
Recorder: J. TREFFY	Sampling Location (circle one): BSMP / Northstar / <u>Liberty</u> / Other				
Latitude (WGS84) 70° 23.9972'		Longitude (WGS84) 148° 00.1264			
Field Observations and Measurements					
Wind Speed (kts): 18	Wind Direction: ESE	Seas/Ice: 4'			
Water Depth (ft): 17.2	Conductivity, Temperature, Depth (CTD): ☒				
Doppler Current: ☒	Turbidity: 35 NTU	Instrument Tow: NO			
Comments:					
Sediment Samples					
Device: Van Veen Grab Other-			No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C	Methyl Hg
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed					
Indications of Anoxia: Yes No			H ₂ S Odor: Yes No		
Sediment Comments:					
☒ Water/Suspended Sediment Samples: ☒ Surface 1.0, 1.5, 2.5, 4 m Mid-Water Bottom Other					
Large Volume Water Samples: Replicate 1 Replicate 2					
Volume filtered/processed (liters)		XAD Cartridge		Pleated Filter	TSS
LV Water Comments:					
Biota					
Amphipods	Traps Deployed:	Traps Retrieved:		Anonyx:	
Clams	Number of Grabs:	Astarte:		Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:	
Biota Comments:					
Quality Control Samples					
Field Blank	Equipment Blank	Trip Blank		Other	
Overall Comments:					
Field Personnel:					
MERTZ, TREFFY, TROONE, DELFOSSE					
Signature: 			Date: 5 August 2004		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 501	Date: 5 Aug 04	Time (local): 0955	Project #: G005001 G005002, G004974			
Recorder: Hardin		Sampling Location (circle one) BSMP / Northstar / Liberty / Other				
Latitude (WGS84) 70° 25.0763		Longitude (WGS84) 148° 03.5628				
Field Observations and Measurements						
Wind Speed (kts): 18	Wind Direction: ESE		Seas/Ice: 4' seas			
Water Depth (ft): 18.2	Conductivity, Temperature, Depth (CTD):					
Doppler Current:	Turbidity:		Instrument Tow:			
Comments:						
Sediment Samples						
Device: Van Veen Grab Other-			No. of Replicates 1			
Organics	Metals	Grain Size	TOC	¹³ C	Methyl Hg	Other
04501-DL-PHE-S ✓		✓	✓			
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed						
Indications of Anoxia: Yes No			H ₂ S Odor: Yes No			
Sediment Comments:						
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other						
Large Volume Water Samples: Replicate 1 Replicate 2						
Volume filtered/processed (liters)		XAD Cartridge		Pleated Filter	TSS	
LV Water Comments:						
Biota						
Amphipods	Traps Deployed:		Traps Retrieved:		Anonyx:	
Clams	Number of Grabs:		Astarte:		Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:		Moorings Retrieved:	Mussels:	SPMD:	
Biota Comments:						
Quality Control Samples						
Field Blank	Equipment Blank		Trip Blank		Other	
Overall Comments:						
Field Personnel: Mertz, Trefry, Trucina, Alfosse						
Signature: [Signature]			Date: 8 Aug 04			

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>5(1)</u>	Date: <u>8-5-04</u>	Time (local): <u>1030</u>	Project #: <u>G005001</u> G005002, G004974	
Recorder: <u>TREFFY</u>	Sampling Location (circle one) <u>BSMP</u> Northstar / Liberty / Other			
Latitude (WGS84) <u>70° 25.6763'</u>		Longitude (WGS84) <u>148° 03.5628'</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>20</u>	Wind Direction: <u>ESE</u>	Seas/Ice: <u>4'</u>		
Water Depth (ft): <u>18.2</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u> Other-		No. of Replicates		
Organics ☒	Metals ☒	Grain Size ☒	TOC ☒	¹³ C
				Methyl Hg
				Other
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> <u>Fine</u> → Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes <u>No</u>		H ₂ S Odor: Yes <u>No</u>		
Sediment Comments: <u>FINE TO MEDIUM SAND - LITTLE OR NO FINE FRACTION</u>				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel:				
<u>MERTZ, TREFFY, TROCHME, DELFOSSE</u>				
Signature: <u>JL H. Treff</u>			Date: <u>5 August 2004</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

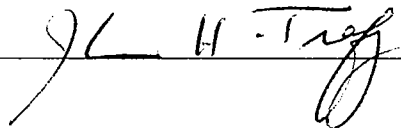
Station ID: E2	Date: 8-5-04	Time (local): 1145	Project #: G005001 , G005002, G004974	
Recorder: TREFFY		Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 26.0057'		Longitude (WGS84) 148° 00.0680'		
Field Observations and Measurements				
Wind Speed (kts): 16	Wind Direction: ESE	Seas/Ice: 3-4'		
Water Depth (ft): 21.8'	Conductivity, Temperature, Depth (CTD): ☒			
Doppler Current: ☒	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): ☒ >50% silt/clay ☐ Fine ☐ Coarse Sand ☐ Gravel ☐ Shell Hash ☐ Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: ☒ Surface 1.0, 1.5, 2.5m ☐ Mid-Water 4, 6m ☐ Bottom ☐ Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge		Pleated Filter	TSS
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel:				
MERTZ, TREFFY, TRUCINE, PELFOSSE				
Signature:			Date: 5 August 2004	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: E3	Date: 8-5-04	Time (local): 1300	Project #: G005001, G005002 , G004974	
Recorder: TREFFY	Sampling Location (circle one): BSMP / Northstar / Liberty / Other			
Latitude (WGS84) 70° 27.9779'		Longitude (WGS84) 148° 06.1030'		
Field Observations and Measurements				
Wind Speed (kts): 15	Wind Direction: ESE	Seas/Ice: 2' - SCATTERED SEA ICE		
Water Depth (ft): 16	Conductivity, Temperature, Depth (CTD): ☒			
Doppler Current: ☒	Turbidity: ~2	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: ☒ Surface 1.0, 1.5, 2.5m ☒ Mid-Water 4m Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)		XAD Cartridge	Pleated Filter	TSS
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel:				
MERTZ, TREFFY, TROCINE, DELPOSSÉ				
Signature: 			Date: 5 August, 2004	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>SS</u>	Date: <u>8-5-04</u>	Time (local): <u>1410</u>	Project #: <u>G005001, G005002, G004974</u>	
Recorder: <u>TREFFY</u>		Sampling Location (circle one): <u>BSMP / Northstar / Liberty / Other</u>		
Latitude (WGS84) <u>70° 26.5846'</u>		Longitude (WGS84) <u>148° 14.0971'</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>20</u>	Wind Direction: <u>ESE</u>	Seas/Ice: <u>3-4</u>		
Water Depth (ft): <u>25</u>	Conductivity, Temperature, Depth (CTD): <u>✓</u>			
Doppler Current: <u>✓</u>	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u> Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> <u>Fine</u> <u>Coarse Sand</u> <u>Gravel</u> <u>Shell Hash</u> <u>Mixed</u>				
Indications of Anoxia: <u>Yes</u> <u>No</u>		H ₂ S Odor: <u>Yes</u> <u>No</u>		
Sediment Comments:				
Water/Suspended Sediment Samples: <u>✓</u> Surface <u>1, 5, 2-5, 4</u> <u>Mid-Water</u> <u>6</u> <u>Bottom</u> Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel:				
<u>MERTZ, TREFFY, TRUCKIN, DZLFOUSS</u>				
Signature: <u>[Signature]</u>		Date: <u>5 August 2004</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 54	Date: 8-5-04	Time (local): 1445	Project #: G005001, G005002, G004974	
Recorder: TREFFY		Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 25.7947'		Longitude (WGS84) 148° 14.1101'		
Field Observations and Measurements				
Wind Speed (kts): 25	Wind Direction: ESE	Seas/Ice: 4-5'		
Water Depth (ft): 20.6	Conductivity, Temperature, Depth (CTD): ✓			
Doppler Current: ✓	Turbidity: -30	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: ✓ Surface 1.0, 1.5, 2.5, 4.0 Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel:				
MERTZ, TREFFY, TROCI, DELFOSSE				
Signature: JCH-Treff		Date: 5 August 2004		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>S2</u>	Date: <u>8-5-04</u>	Time (local): <u>1550</u>	Project #: <u>G005001</u> , G005002, G004974	
Recorder: <u>TREFFY</u>		Sampling Location (circle one): BSMP / Northstar / <u>Liberty</u> / Other		
Latitude (WGS84) <u>70° 24.3032'</u>		Longitude (WGS84) <u>148° 14.1992'</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>25</u>	Wind Direction: <u>ESE</u>	Seas/Ice: <u>4-5'</u>		
Water Depth (ft): <u>11</u>	Conductivity, Temperature, Depth (CTD): ☒			
Doppler Current: ☒	Turbidity: <u>~50</u>	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: ☒ Surface <u>1.0</u> <u>1.5</u> <u>Mid-Water</u> <u>2.5</u> Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel:				
<u>MERTZ TREFFY TROCINE DELFOSSE</u>				
Signature: <u>[Signature]</u>		Date: <u>8 5 August 2004</u>		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N18	Date: 6 Aug 04	Deploy ⁸ Time (local): 824	Project # (G005001) G005002, G004974	
Recorder: Mike Walsh		Sampling Location (circle one): BSMP (Northstar) Liberty / Other		
Latitude (WGS84) 70° 29.0908		Longitude (WGS84) 148° 42.2610		
Field Observations and Measurements				
Wind Speed (kts): 0-5 kt	Wind Direction: SE	Seas/Ice: 7 ft ^{mw} < 1 ft		
Water Depth (ft): 32.8	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity: ✓ mw	Instrument Tow:		
Comments:				
Sediment Samples				
Device: (Van Veen Grab) Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-N18-01-PHC-S ✓	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes (No)		H ₂ S Odor: Yes (No)		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota 04-N18-01-PHC/MET-AN				
Amphipods	Traps Deployed: 2	Traps Retrieved: 1	Anonyx: ~150 ml	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: Retrieved 1 trap 1653-6 Aug 04 - Soak time 8.5 hrs - many Amphipods				
7 Aug 04 Retrieved lost trap 1300 by grapnel hook				
minimal Amphipods due to dragging				
Field Personnel:				
Mertz, Walsh, Trefry, Delfosse				
Signature: Michael Walsh			Date: 6 Aug 04	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>N19</u>	Date: <u>6 Aug 04</u>	Time (local): <u>9:45</u>	Project #: <u>G005001</u> G005002, G004974	
Recorder: <u>Mike Walsh</u>		Sampling Location (circle one): BSMP <u>Northstar</u> / Liberty / Other		
Latitude (WGS84) <u>70° 29.1251</u>		Longitude (WGS84) <u>148° 40.5610</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5 kts</u>	Wind Direction: <u>SE</u>	Seas/Ice: <u><1 ft</u>		
Water Depth (ft): <u>34</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity: <u>✓</u>	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u> Other-		No. of Replicates <u>1</u>		
Organics	Metals	Grain Size	TOC	¹³ C
<u>64-N19-01-PHC-S</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes <u>(No)</u>		H ₂ S Odor: Yes <u>(No)</u>		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Walsh, Merts, Trecky, DeFosse</u>				
Signature: <u>Michael Walsh</u>		Date: <u>6 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N20	Date: 6 Aug 04	Time (local): 10:10	Project #: G005001 , G005002, G004974		
Recorder: Niki Walsh		Sampling Location (circle one): BSMP (Northstar) Liberty / Other			
Latitude (WGS84) 70° 27.9697		Longitude (WGS84) 148° 41.6865			
Field Observations and Measurements					
Wind Speed (kts): 0-5 kts	Wind Direction: SE	Seas/Ice: < 1 ft			
Water Depth (ft): 21 ft	Conductivity, Temperature, Depth (CTD):				
Doppler Current:	Turbidity:	Instrument Tow:			
Comments:					
Sediment Samples					
Device: (Van Veen Grab) Other-		No. of Replicates 1			
Organics	Metals	Grain Size	TOC	¹³ C	Methyl Hg
64-N20-01-TH-S	✓	✓	✓		
Sediment Texture (circle all that apply): (>50% silt/clay) Fine Coarse Sand Gravel Shell Hash Mixed					
Indications of Anoxia: Yes (No)			H ₂ S Odor: Yes (No)		
Sediment Comments: Fine sand under thin layer silt/clay					
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other					
Large Volume Water Samples: Replicate 1 Replicate 2					
Volume filtered/processed (liters)	XAD Cartridge		Pleated Filter		TSS
LV Water Comments:					
Biota					
Amphipods	Traps Deployed:	Traps Retrieved:		Anonyx:	
Clams	Number of Grabs:	Astarte:		Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:	
Biota Comments:					
Quality Control Samples					
Field Blank	Equipment Blank	Trip Blank		Other	
Overall Comments:					
Field Personnel: Walsh, Mertz, Trefry, Delfosse					
Signature: Michael Walsh			Date: 6 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N12	Date: 6 AUG 04	Time (local): 1040	Project #: G005001 , G005002, G004974	
Recorder: Mike Walsh		Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 27.3503		Longitude (WGS84) 140° 42.1061		
Field Observations and Measurements				
Wind Speed (kts): Calm	Wind Direction: —	Seas/Ice: FLAT		
Water Depth (ft): 17	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-M13-01-PHC-S	✓	NO	✓	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments: FINE THIN (mm) (a few mm) FLOCK OF CLAY OVER GRAVEL *				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
* DECIDED TO SAMPLE THIN FLOCK AS BEAT LIKELY RECENT INPUTS OF CLAY OVER GRAVEL				
Field Personnel: Walsh, Mertz, Trefry, Delfosse				
Signature: Michael Walsh			Date: 6 Aug 04	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N 11	Date: 6 Aug 04	Time (local): 11 10	Project # (G005001) G005002, G004974	
Recorder: Mike Walsh		Sampling Location (circle one): BSMP / (Northstar) / Liberty / Other		
Latitude (WGS84) 70° 28 4650		Longitude (WGS84) 148° 42 0122		
Field Observations and Measurements				
Wind Speed (kts): Calm	Wind Direction: SE	Seas/Ice: Flat		
Water Depth (ft): 24.6	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: (Van Veen Grab) Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-N11-01-PHC-S	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay Fine (Coarse Sand Gravel) Shell Hash Mixed				
Indications of Anoxia: Yes (No)		H ₂ S Odor: Yes (No)		
Sediment Comments: few mm thin silt/clay over coarse sand gravel				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge		Pleated Filter	TSS
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: Big Rocks and Gravel at 70° 28 4489 148° 41 9559 moved to Recorded location				
Field Personnel: Walsh, Mertz, Trefry, Delfosse				
Signature: Michael Walsh Date: 6 Aug 04				

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N10	Date: 6 Aug 04	Time (local): 1120	Project #: G005001 G005002, G004974	
Recorder: Mike Walsh		Sampling Location (circle one): BSMP Northstar Liberty / Other		
Latitude (WGS84) 70° 29. 0187		Longitude (WGS84) 149° 41. 7676		
Field Observations and Measurements				
Wind Speed (kts): Calm	Wind Direction: SE	Seas/Ice: flat		
Water Depth (ft): 32.5	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-N10-01-PHC-S	☒	☒	☒	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments: Seems like normal Background sediment compared to N11				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge		Pleated Filter	TSS
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Walsh, Mertz, Trefry, Delfosse				
Signature: Michael Walsh		Date: 6 Aug 04		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N23	Date: 6 Aug 04	Time (local): 1137	Project #: G005001 G005002, G004974	
Recorder: Mike Walsh		Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 29.3749		Longitude (WGS84) 148° 41.9297		
Field Observations and Measurements				
Wind Speed (kts): Calm	Wind Direction: SE	Seas/Ice: Calm		
Water Depth (ft): 36 ft	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-N23-01-PHG-5	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments: fine thin layer of flock over stiff gray clay				
Water/Suspended Sediment Samples: Surface * Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge		Pleated Filter	TSS
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: * Water from Zodiac 50 ft from Northstar Island				
Field Personnel: Walsh, Mertz, Tre Fry, Delfosse				
Signature: Michael Walsh		Date: 6 Aug 04		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N09	Date: 6 Aug 04	Time (local): 1238	Project #: G005001 , G005002, G004974	
Recorder: Mike Walsh		Sampling Location (circle one): BSMP Northstar / Liberty / Other		
Latitude (WGS84) 70° 29.3407^{nw} 3405		Longitude (WGS84) 148° 35.1494		
Field Observations and Measurements				
Wind Speed (kts): Calm	Wind Direction: -	Seas/Ice: Calm		
Water Depth (ft): 31.7 ft	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-N9-01-PHC-S	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments: Sandy				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge		Pleated Filter	TSS
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Walsh, Mertz, Trefry, Delfosse				
Signature: Michael Walsh		Date: 6 Aug 04		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: NOB	Date: 6 Aug 04	Time (local): 1255	Project # G005001 , G005002, G004974	
Recorder: Mike Walsh		Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 29.4281		Longitude (WGS84) 148° 38.3250		
Field Observations and Measurements				
Wind Speed (kts): Calm	Wind Direction: -	Seas/Ice: Calm		
Water Depth (ft): 35.4	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-NB-01-PHG-S	☒	☒	☒	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes (No)		H ₂ S Odor: Yes (No)		
Sediment Comments: stiff clay below surface				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge		Pleated Filter	TSS
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Walsh, Mertz, Trefry, Delfosse				
Signature: Michael Walsh		Date: 6 Aug 04		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N07	Date: 6 Aug 04	Time (local): 1315	Project #: G005001 G005002, G004974	
Recorder: Mike Walsh		Sampling Location (circle one): BSMP Northstar / Liberty / Other		
Latitude (WGS84) 70° 29 . 5703		Longitude (WGS84) 148° 40 . 0925		
Field Observations and Measurements				
Wind Speed (kts): Calm	Wind Direction: -	Seas/Ice: Calm		
Water Depth (ft): 36.4 ft	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-N8-01-PHC-S	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay (Fine) Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes (No)		H ₂ S Odor: Yes (No)		
Sediment Comments: Fine Flock over Fine sand				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Walsh, Mertz, Trefry, Delfosse				
Signature: Michael Walsh		Date: 6 Aug 04		

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Summer 2004 Station Log

Station ID: N 17	Date: 6 Aug 04	Time (local): 1332	Project #: G005001 G005002, G004974	
Recorder: Mike Walsh		Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 29. 8177		Longitude (WGS84) 148° 40. 3584		
Field Observations and Measurements				
Wind Speed (kts): Calm	Wind Direction: —	Seas/Ice: calm		
Water Depth (ft): 38.3 ft	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-N17-01-PHC-S	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes (No)		H ₂ S Odor: Yes (No)		
Sediment Comments: fine flock over stiff clay				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Walsh, Mertz, Trefry, Delfosse				
Signature: Michael Walsh		Date: 6 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: K 1	Date: 6 Aug 04	Time (local): 1402	Project # (G005001) G005002, G004974		
Recorder: Mike Walsh		Sampling Location (circle one): BSMP / (Northstar) Liberty (Other)			
Latitude (WGS84) 70° 27.6797		Longitude (WGS84) 148° 41.2676			
Field Observations and Measurements					
Wind Speed (kts): 0-5	Wind Direction: NW		Seas/Ice: calm		
Water Depth (ft): 21.4	Conductivity, Temperature, Depth (CTD): ☒				
Doppler Current: ☒	Turbidity: 12 surface		Instrument Tow:		
Comments:					
Sediment Samples					
Device: Van Veen Grab Other-			No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C	Methyl Hg
Sediment Texture (circle all that apply): ☒ >50% silt/clay ☐ Fine ☐ Coarse Sand ☐ Gravel ☐ Shell Hash ☐ Mixed					
Indications of Anoxia: Yes ☐ No ☒			H ₂ S Odor: Yes ☐ No ☒		
Sediment Comments:					
Water/Suspended Sediment Samples: ☒ Surface 1-15-2.5m Mid-Water ☐ Bottom 6m Other ☐					
Large Volume Water Samples: Replicate 1 Replicate 2					
Volume filtered/processed (liters)		XAD Cartridge		Pleated Filter	TSS
LV Water Comments:					
Biota					
Amphipods	Traps Deployed:	Traps Retrieved:		Anonyx:	
Clams	Number of Grabs:	Astarte:		Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:	
Biota Comments:					
Quality Control Samples					
Field Blank	Equipment Blank	Trip Blank		Other	
Overall Comments:					
Field Personnel: Walsh, Mertz, Tretry, Delfosse					
Signature: Michael Walsh			Date: 6 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: K2	Date: 6 Aug 04	Time (local): 1507	Project #: G005001 G005002, G004974		
Recorder: Mike Walsh		Sampling Location (circle one): BSMP / Northstar Liberty / Other			
Latitude (WGS84) 70° 28.3053		Longitude (WGS84) 148° 40.1109			
Field Observations and Measurements					
Wind Speed (kts): 0-5	Wind Direction: NW		Seas/Ice: calm		
Water Depth (ft): 27 ft	Conductivity, Temperature, Depth (CTD): ☒				
Doppler Current: ☒	Turbidity: ☒		Instrument Tow:		
Comments:					
Sediment Samples					
Device: Van Veen Grab Other-			No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C	Methyl Hg
Sediment Texture (circle all that apply): ☒ >50% silt/clay ☐ Fine ☐ Coarse Sand Gravel ☐ Shell Hash ☐ Mixed					
Indications of Anoxia: Yes ☐ No ☒			H ₂ S Odor: Yes ☐ No ☒		
Sediment Comments:					
Water/Suspended Sediment Samples: Surface ☒ Mid-Water 1-1.5-2.5m Bottom 6m Other					
Large Volume Water Samples: Replicate 1 Replicate 2					
Volume filtered/processed (liters)		XAD Cartridge		Pleated Filter	TSS
LV Water Comments:					
Biota					
Amphipods	Traps Deployed:	Traps Retrieved:		Anonyx:	
Clams	Number of Grabs:	Astarte:		Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:	
Biota Comments:					
Quality Control Samples					
Field Blank	Equipment Blank	Trip Blank		Other	
Overall Comments:					
Field Personnel: Walsh, Mertz, Tretry, Delfosse					
Signature: Michael Walsh			Date: 6 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: K3	Date: 6 Aug 04	Time (local): 1604	Project # G005001 , G005002, G004974		
Recorder: Mike Walsh		Sampling Location (circle one): BSMP / Northstar / Liberty / Other			
Latitude (WGS84) 70° 28.9968		Longitude (WGS84) 148° 38.8059			
Field Observations and Measurements					
Wind Speed (kts): 0-5	Wind Direction: NW		Seas/Ice: Calm		
Water Depth (ft): 33.3#	Conductivity, Temperature, Depth (CTD): 8mw ✓				
Doppler Current: ✓	Turbidity: ✓		Instrument Tow:		
Comments:					
Sediment Samples					
Device: Van Veen Grab Other-			No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C	Methyl Hg
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed					
Indications of Anoxia: Yes No			H ₂ S Odor: Yes No		
Sediment Comments:					
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other					
Large Volume Water Samples: Replicate 1 Replicate 2					
Volume filtered/processed (liters)		XAD Cartridge		Pleated Filter	TSS
LV Water Comments:					
Biota					
Amphipods	Traps Deployed:		Traps Retrieved:		Anonyx:
Clams	Number of Grabs:		Astarte:		Cyrtodaria:
Mussels/SPMD	Moorings Deployed:		Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:					
Quality Control Samples					
Field Blank	Equipment Blank		Trip Blank		Other
Overall Comments:					
Field Personnel: Walsh, Mertz, Tretry, Delfosse					
Signature: Michael Walsh				Date: 6 Aug 04	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: NO6	Date: 7 Aug 04	Time (local): 1340	Project #: G005001 G005002, G004974	
Recorder: Mike Walsh		Sampling Location (circle one): BSMP Northstar Liberty / Other		
Latitude (WGS84) 70 29.5591		Longitude (WGS84) 148 43.2685		
Field Observations and Measurements				
Wind Speed (kts): 5KTS	Wind Direction: E	Seas/Ice: <1ft		
Water Depth (ft): 37.1ft	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 3		
Organics	Metals	Grain Size	TOC	¹³ C
64-NG-0123-PHC-S	☒	☒	☒	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes ^{in past (anoxic)} No		H ₂ S Odor: Yes (No)		
Sediment Comments: 3 Replicates collected (1) 1340 (2) 1347 (3) 1357				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge		Pleated Filter	TSS
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: * Grab two black mud (fes)				
Field Personnel: Walsh, Mertz, Treftoy				
Signature: Michael Walsh		Date: 7 Aug 04		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>N 16</u>	Date: <u>7 Aug 04</u>	Time (local): <u>14 20</u>	Project #: <u>G005001</u> G005002, G004974	
Recorder: <u>Mike Walsh</u>		Sampling Location (circle one): BSMP / <u>Northstar</u> / Liberty / Other		
Latitude (WGS84) <u>70 29.9089</u>		Longitude (WGS84) <u>148 42.3907</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>5 Kts</u>	Wind Direction: <u>E</u>	Seas/Ice: <u>< 1ft</u>		
Water Depth (ft): <u>39.2 ft</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u> Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
<u>04-N16-01-PHGS</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes <u>(No)</u>		H ₂ S Odor: Yes <u>(No)</u>		
Sediment Comments: <u>Thin layer over of flocc over stiff clay</u>				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: <u>Small sample collected due to such thin availability of recent deposits</u>				
Field Personnel: <u>Walsh, Mertz, Trefny</u>				
Signature: <u>Michael Walsh</u> Date: <u>7 Aug 04</u>				

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N 03	Date: 7 Aug 04	Time (local): 1435	Project # (G005001) G005002, G004974	
Recorder: Nike Walsh		Sampling Location (circle one): BSMP / (Northstar) Liberty / Other		
Latitude (WGS84) 70° 30.0202		Longitude (WGS84) 148° 41.4901		
Field Observations and Measurements				
Wind Speed (kts): 0-5 kts	Wind Direction: E	Seas/Ice: Calm		
Water Depth (ft): 40.2 ft	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: (Van Veen Grab) Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
04-N03-01-PHCs	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes (No)		H ₂ S Odor: Yes (No)		
Sediment Comments: Thick layer of flocc over stiff gray clay				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Walsh, Mertz, Treby				
Signature: Michael Walsh		Date: 7 Aug 04		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N04 ^{NO4} N04	Date: 7 Aug 04	Time (local): 1520	Project #: <u>G005001</u> G005002, G004974	
Recorder: Mike Walsh	Sampling Location (circle one): BSMP / <u>Northstar</u> / Liberty / Other			
Latitude (WGS84) 70° 30.5390	Longitude (WGS84) 148° 41.3394			
Field Observations and Measurements				
Wind Speed (kts): 0-5 kts	Wind Direction: E	Seas/Ice: Calm		
Water Depth (ft): 42.7 ft	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
04-N04-01-PHC-S	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay <u>Very Fine</u> Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes <u>No</u>		H ₂ S Odor: Yes <u>No</u>		
Sediment Comments: Fine sandy Flocc over stiff clay				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge		Pleated Filter	TSS
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Walsh, Mertz, Trefry				
Signature: Michael Walsh		Date: 7 Aug 04		

Battelle

The Business of Innovation

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N05	Date: 7 Aug 04	Time (local): 1545	Project #: G005001 G005002, G004974	
Recorder: Nike Walsh		Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 29.6337		Longitude (WGS84) 148° 44.6996		
Field Observations and Measurements				
Wind Speed (kts): 05 Kts	Wind Direction: E	Seas/Ice: Calm		
Water Depth (ft): 36.8 ft	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-N05-01-PHC-S	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments: Fine sandy Flock over stiff clay				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Walsh, Mertz, Trefry				
Signature: Michael Walsh		Date: 7 Aug 04		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: KO	Date: 7 Aug 04	Time (local): 1635	Project #: G005001, G005002, G004974		
Recorder: Mike Walsh		Sampling Location (circle one): BSMP / Northstar / Liberty (Other)			
Latitude (WGS84) 70° 26.3959		Longitude (WGS84) 148° 41.8500			
Field Observations and Measurements					
Wind Speed (kts): 0-5 kts	Wind Direction: E		Seas/Ice: calm		
Water Depth (ft): 9.5 ft	Conductivity, Temperature, Depth (CTD): ✓				
Doppler Current: ✓	Turbidity: ✓		Instrument Tow:		
Comments:					
Sediment Samples					
Device: Van Veen Grab Other-			No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C	Methyl Hg
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed					
Indications of Anoxia: Yes No			H ₂ S Odor: Yes No		
Sediment Comments:					
Water/Suspended Sediment Samples: Surface ✓ Mid-Water 1, 1.5, 2.5 Bottom Other					
Large Volume Water Samples: Replicate 1 Replicate 2					
Volume filtered/processed (liters)		XAD Cartridge		Pleated Filter	TSS
LV Water Comments:					
Biota					
Amphipods	Traps Deployed:		Traps Retrieved:		Anonyx:
Clams	Number of Grabs:		Astarte:		Cyrtodaria:
Mussels/SPMD	Moorings Deployed:		Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:					
Quality Control Samples					
Field Blank	Equipment Blank		Trip Blank		Other
Overall Comments:					
Field Personnel: Walsh, Mertz, Tretry					
Signature: Michael Walsh				Date: 7 Aug 04	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>103</u>	Date: <u>8 Aug 04</u>	Time (local): <u>0824</u> in	Project #: G005001 <u>G005002</u> G004974	
Recorder: <u>Hardin</u>		Sampling Location (circle one): BSMP / Northstar / <u>Liberty</u> / Other		
Latitude (WGS84) <u>70° 30.017</u>		Longitude (WGS84) <u>148° 46.4656</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>SE</u>	Seas/Ice: <u>Calm seas / no ice</u>		
Water Depth (ft): <u>40.2</u>	Conductivity, Temperature, Depth (CTD): <u>---</u>			
Doppler Current: <u>---</u>	Turbidity: <u>---</u>	Instrument Tow: <u>---</u>		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
<u>0.4 - pH</u>				
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota <u>Fish (minnow) traps: 2 deployed / 2 recovered 9 Aug 04</u> <u>1402, 1300, 1100</u> <u>1500</u> <u>1600</u> <u>1700</u> <u>1800</u> <u>1900</u> <u>2000</u> <u>2100</u> <u>2200</u> <u>2300</u> <u>2400</u> <u>2500</u> <u>2600</u> <u>2700</u> <u>2800</u> <u>2900</u> <u>3000</u> <u>3100</u> <u>3200</u> <u>3300</u> <u>3400</u> <u>3500</u> <u>3600</u> <u>3700</u> <u>3800</u> <u>3900</u> <u>4000</u> <u>4100</u> <u>4200</u> <u>4300</u> <u>4400</u> <u>4500</u> <u>4600</u> <u>4700</u> <u>4800</u> <u>4900</u> <u>5000</u> <u>5100</u> <u>5200</u> <u>5300</u> <u>5400</u> <u>5500</u> <u>5600</u> <u>5700</u> <u>5800</u> <u>5900</u> <u>6000</u> <u>6100</u> <u>6200</u> <u>6300</u> <u>6400</u> <u>6500</u> <u>6600</u> <u>6700</u> <u>6800</u> <u>6900</u> <u>7000</u> <u>7100</u> <u>7200</u> <u>7300</u> <u>7400</u> <u>7500</u> <u>7600</u> <u>7700</u> <u>7800</u> <u>7900</u> <u>8000</u> <u>8100</u> <u>8200</u> <u>8300</u> <u>8400</u> <u>8500</u> <u>8600</u> <u>8700</u> <u>8800</u> <u>8900</u> <u>9000</u> <u>9100</u> <u>9200</u> <u>9300</u> <u>9400</u> <u>9500</u> <u>9600</u> <u>9700</u> <u>9800</u> <u>9900</u> <u>10000</u> <u>10100</u> <u>10200</u> <u>10300</u> <u>10400</u> <u>10500</u> <u>10600</u> <u>10700</u> <u>10800</u> <u>10900</u> <u>11000</u> <u>11100</u> <u>11200</u> <u>11300</u> <u>11400</u> <u>11500</u> <u>11600</u> <u>11700</u> <u>11800</u> <u>11900</u> <u>12000</u> <u>12100</u> <u>12200</u> <u>12300</u> <u>12400</u> <u>12500</u> <u>12600</u> <u>12700</u> <u>12800</u> <u>12900</u> <u>13000</u> <u>13100</u> <u>13200</u> <u>13300</u> <u>13400</u> <u>13500</u> <u>13600</u> <u>13700</u> <u>13800</u> <u>13900</u> <u>14000</u> <u>14100</u> <u>14200</u> <u>14300</u> <u>14400</u> <u>14500</u> <u>14600</u> <u>14700</u> <u>14800</u> <u>14900</u> <u>15000</u> <u>15100</u> <u>15200</u> <u>15300</u> <u>15400</u> <u>15500</u> <u>15600</u> <u>15700</u> <u>15800</u> <u>15900</u> <u>16000</u> <u>16100</u> <u>16200</u> <u>16300</u> <u>16400</u> <u>16500</u> <u>16600</u> <u>16700</u> <u>16800</u> <u>16900</u> <u>17000</u> <u>17100</u> <u>17200</u> <u>17300</u> <u>17400</u> <u>17500</u> <u>17600</u> <u>17700</u> <u>17800</u> <u>17900</u> <u>18000</u> <u>18100</u> <u>18200</u> <u>18300</u> <u>18400</u> <u>18500</u> <u>18600</u> <u>18700</u> <u>18800</u> <u>18900</u> <u>19000</u> <u>19100</u> <u>19200</u> <u>19300</u> <u>19400</u> <u>19500</u> <u>19600</u> <u>19700</u> <u>19800</u> <u>19900</u> <u>20000</u> <u>20100</u> <u>20200</u> <u>20300</u> <u>20400</u> <u>20500</u> <u>20600</u> <u>20700</u> <u>20800</u> <u>20900</u> <u>21000</u> <u>21100</u> <u>21200</u> <u>21300</u> <u>21400</u> <u>21500</u> <u>21600</u> <u>21700</u> <u>21800</u> <u>21900</u> <u>22000</u> <u>22100</u> <u>22200</u> <u>22300</u> <u>22400</u> <u>22500</u> <u>22600</u> <u>22700</u> <u>22800</u> <u>22900</u> <u>23000</u> <u>23100</u> <u>23200</u> <u>23300</u> <u>23400</u> <u>23500</u> <u>23600</u> <u>23700</u> <u>23800</u> <u>23900</u> <u>24000</u> <u>24100</u> <u>24200</u> <u>24300</u> <u>24400</u> <u>24500</u> <u>24600</u> <u>24700</u> <u>24800</u> <u>24900</u> <u>25000</u> <u>25100</u> <u>25200</u> <u>25300</u> <u>25400</u> <u>25500</u> <u>25600</u> <u>25700</u> <u>25800</u> <u>25900</u> <u>26000</u> <u>26100</u> <u>26200</u> <u>26300</u> <u>26400</u> <u>26500</u> <u>26600</u> <u>26700</u> <u>26800</u> <u>26900</u> <u>27000</u> <u>27100</u> <u>27200</u> <u>27300</u> <u>27400</u> <u>27500</u> <u>27600</u> <u>27700</u> <u>27800</u> <u>27900</u> <u>28000</u> <u>28100</u> <u>28200</u> <u>28300</u> <u>28400</u> <u>28500</u> <u>28600</u> <u>28700</u> <u>28800</u> <u>28900</u> <u>29000</u> <u>29100</u> <u>29200</u> <u>29300</u> <u>29400</u> <u>29500</u> <u>29600</u> <u>29700</u> <u>29800</u> <u>29900</u> <u>30000</u> <u>30100</u> <u>30200</u> <u>30300</u> <u>30400</u> <u>30500</u> <u>30600</u> <u>30700</u> <u>30800</u> <u>30900</u> <u>31000</u> <u>31100</u> <u>31200</u> <u>31300</u> <u>31400</u> <u>31500</u> <u>31600</u> <u>31700</u> <u>31800</u> <u>31900</u> <u>32000</u> <u>32100</u> <u>32200</u> <u>32300</u> <u>32400</u> <u>32500</u> <u>32600</u> <u>32700</u> <u>32800</u> <u>32900</u> <u>33000</u> <u>33100</u> <u>33200</u> <u>33300</u> <u>33400</u> <u>33500</u> <u>33600</u> <u>33700</u> <u>33800</u> <u>33900</u> <u>34000</u> <u>34100</u> <u>34200</u> <u>34300</u> <u>34400</u> <u>34500</u> <u>34600</u> <u>34700</u> <u>34800</u> <u>34900</u> <u>35000</u> <u>35100</u> <u>35200</u> <u>35300</u> <u>35400</u> <u>35500</u> <u>35600</u> <u>35700</u> <u>35800</u> <u>35900</u> <u>36000</u> <u>36100</u> <u>36200</u> <u>36300</u> <u>36400</u> <u>36500</u> <u>36600</u> <u>36700</u> <u>36800</u> <u>36900</u> <u>37000</u> <u>37100</u> <u>37200</u> <u>37300</u> <u>37400</u> <u>37500</u> <u>37600</u> <u>37700</u> <u>37800</u> <u>37900</u> <u>38000</u> <u>38100</u> <u>38200</u> <u>38300</u> <u>38400</u> <u>38500</u> <u>38600</u> <u>38700</u> <u>38800</u> <u>38900</u> <u>39000</u> <u>39100</u> <u>39200</u> <u>39300</u> <u>39400</u> <u>39500</u> <u>39600</u> <u>39700</u> <u>39800</u> <u>39900</u> <u>40000</u> <u>40100</u> <u>40200</u> <u>40300</u> <u>40400</u> <u>40500</u> <u>40600</u> <u>40700</u> <u>40800</u> <u>40900</u> <u>41000</u> <u>41100</u> <u>41200</u> <u>41300</u> <u>41400</u> <u>41500</u> <u>41600</u> <u>41700</u> <u>41800</u> <u>41900</u> <u>42000</u> <u>42100</u> <u>42200</u> <u>42300</u> <u>42400</u> <u>42500</u> <u>42600</u> <u>42700</u> <u>42800</u> <u>42900</u> <u>43000</u> <u>43100</u> <u>43200</u> <u>43300</u> <u>43400</u> <u>43500</u> <u>43600</u> <u>43700</u> <u>43800</u> <u>43900</u> <u>44000</u> <u>44100</u> <u>44200</u> <u>44300</u> <u>44400</u> <u>44500</u> <u>44600</u> <u>44700</u> <u>44800</u> <u>44900</u> <u>45000</u> <u>45100</u> <u>45200</u> <u>45300</u> <u>45400</u> <u>45500</u> <u>45600</u> <u>45700</u> <u>45800</u> <u>45900</u> <u>46000</u> <u>46100</u> <u>46200</u> <u>46300</u> <u>46400</u> <u>46500</u> <u>46600</u> <u>46700</u> <u>46800</u> <u>46900</u> <u>47000</u> <u>47100</u> <u>47200</u> <u>47300</u> <u>47400</u> <u>47500</u> <u>47600</u> <u>47700</u> <u>47800</u> <u>47900</u> <u>48000</u> <u>48100</u> <u>48200</u> <u>48300</u> <u>48400</u> <u>48500</u> <u>48600</u> <u>48700</u> <u>48800</u> <u>48900</u> <u>49000</u> <u>49100</u> <u>49200</u> <u>49300</u> <u>49400</u> <u>49500</u> <u>49600</u> <u>49700</u> <u>49800</u> <u>49900</u> <u>50000</u> <u>50100</u> <u>50200</u> <u>50300</u> <u>50400</u> <u>50500</u> <u>50600</u> <u>50700</u> <u>50800</u> <u>50900</u> <u>51000</u> <u>51100</u> <u>51200</u> <u>51300</u> <u>51400</u> <u>51500</u> <u>51600</u> <u>51700</u> <u>51800</u> <u>51900</u> <u>52000</u> <u>52100</u> <u>52200</u> <u>52300</u> <u>52400</u> <u>52500</u> <u>52600</u> <u>52700</u> <u>52800</u> <u>52900</u> <u>53000</u> <u>53100</u> <u>53200</u> <u>53300</u> <u>53400</u> <u>53500</u> <u>53600</u> <u>53700</u> <u>53800</u> <u>53900</u> <u>54000</u> <u>54100</u> <u>54200</u> <u>54300</u> <u>54400</u> <u>54500</u> <u>54600</u> <u>54700</u> <u>54800</u> <u>54900</u> <u>55000</u> <u>55100</u> <u>55200</u> <u>55300</u> <u>55400</u> <u>55500</u> <u>55600</u> <u>55700</u> <u>55800</u> <u>55900</u> <u>56000</u> <u>56100</u> <u>56200</u> <u>56300</u> <u>56400</u> <u>56500</u> <u>56600</u> <u>56700</u> <u>56800</u> <u>56900</u> <u>57000</u> <u>57100</u> <u>57200</u> <u>57300</u> <u>57400</u> <u>57500</u> <u>57600</u> <u>57700</u> <u>57800</u> <u>57900</u> <u>58000</u> <u>58100</u> <u>58200</u> <u>58300</u> <u>58400</u> <u>58500</u> <u>58600</u> <u>58700</u> <u>58800</u> <u>58900</u> <u>59000</u> <u>59100</u> <u>59200</u> <u>59300</u> <u>59400</u> <u>59500</u> <u>59600</u> <u>59700</u> <u>59800</u> <u>59900</u> <u>60000</u> <u>60100</u> <u>60200</u> <u>60300</u> <u>60400</u> <u>60500</u> <u>60600</u> <u>60700</u> <u>60800</u> <u>60900</u> <u>61000</u> <u>61100</u> <u>61200</u> <u>61300</u> <u>61400</u> <u>61500</u> <u>61600</u> <u>61700</u> <u>61800</u> <u>61900</u> <u>62000</u> <u>62100</u> <u>62200</u> <u>62300</u> <u>62400</u> <u>62500</u> <u>62600</u> <u>62700</u> <u>62800</u> <u>62900</u> <u>63000</u> <u>63100</u> <u>63200</u> <u>63300</u> <u>63400</u> <u>63500</u> <u>63600</u> <u>63700</u> <u>63800</u> <u>63900</u> <u>64000</u> <u>64100</u> <u>64200</u> <u>64300</u> <u>64400</u> <u>64500</u> <u>64600</u> <u>64700</u> <u>64800</u> <u>64900</u> <u>65000</u> <u>65100</u> <u>65200</u> <u>65300</u> <u>65400</u> <u>65500</u> <u>65600</u> <u>65700</u> <u>65800</u> <u>65900</u> <u>66000</u> <u>66100</u> <u>66200</u> <u>66300</u> <u>66400</u> <u>66500</u> <u>66600</u> <u>66700</u> <u>66800</u> <u>66900</u> <u>67000</u> <u>67100</u> <u>67200</u> <u>67300</u> <u>67400</u> <u>67500</u> <u>67600</u> <u>67700</u> <u>67800</u> <u>67900</u> <u>68000</u> <u>68100</u> <u>68200</u> <u>68300</u> <u>68400</u> <u>68500</u> <u>68600</u> <u>68700</u> <u>68800</u> <u>68900</u> <u>69000</u> <u>69100</u> <u>69200</u> <u>69300</u> <u>69400</u> <u>69500</u> <u>69600</u> <u>69700</u> <u>69800</u> <u>69900</u> <u>70000</u> <u>70100</u> <u>70200</u> <u>70300</u> <u>70400</u> <u>70500</u> <u>70600</u> <u>70700</u> <u>70800</u> <u>70900</u> <u>71000</u> <u>71100</u> <u>71200</u> <u>71300</u> <u>71400</u> <u>71500</u> <u>71600</u> <u>71700</u> <u>71800</u> <u>71900</u> <u>72000</u> <u>72100</u> <u>72200</u> <u>72300</u> <u>72400</u> <u>72500</u> <u>72600</u> <u>72700</u> <u>72800</u> <u>72900</u> <u>73000</u> <u>73100</u> <u>73200</u> <u>73300</u> <u>73400</u> <u>73500</u> <u>73600</u> <u>73700</u> <u>73800</u> <u>73900</u> <u>74000</u> <u>74100</u> <u>74200</u> <u>74300</u> <u>74400</u> <u>74500</u> <u>74600</u> <u>74700</u> <u>74800</u> <u>74900</u> <u>75000</u> <u>75100</u> <u>75200</u> <u>75300</u> <u>75400</u> <u>75500</u> <u>75600</u> <u>75700</u> <u>75800</u> <u>75900</u> <u>76000</u> <u>76100</u> <u>76200</u> <u>76300</u> <u>76400</u> <u>76500</u> <u>76600</u> <u>76700</u> <u>76800</u> <u>76900</u> <u>77000</u> <u>77100</u> <u>77200</u> <u>77300</u> <u>77400</u> <u>77500</u> <u>77600</u> <u>77700</u> <u>77800</u> <u>77900</u> <u>78000</u> <u>78100</u> <u>78200</u> <u>78300</u> <u>78400</u> <u>78500</u> <u>78600</u> <u>78700</u> <u>78800</u> <u>78900</u> <u>79000</u> <u>79100</u> <u>79200</u> <u>79300</u> <u>79400</u> <u>79500</u> <u>79600</u> <u>79700</u> <u>79800</u> <u>79900</u> <u>80000</u> <u>80100</u> <u>80200</u> <u>80300</u> <u>80400</u> <u>80500</u> <u>80600</u> <u>80700</u> <u>80800</u> <u>80900</u> <u>81000</u> <u>81100</u> <u>81200</u> <u>81300</u> <u>81400</u> <u>81500</u> <u>81600</u> <u>81700</u> <u>81800</u> <u>81900</u> <u>82000</u> <u>82100</u> <u>82200</u> <u>82300</u> <u>82400</u> <u>82500</u> <u>82600</u> <u>82700</u> <u>82800</u> <u>82900</u> <u>83000</u> <u>83100</u> <u>83200</u> <u>83300</u> <u>83400</u> <u>83500</u> <u>83600</u> <u>83700</u> <u>83800</u> <u>83900</u> <u>84000</u> <u>84100</u> <u>84200</u> <u>84300</u> <u>84400</u> <u>84500</u> <u>84600</u> <u>84700</u> <u>84800</u> <u>84900</u> <u>85000</u> <u>85100</u> <u>85200</u> <u>85300</u> <u>85400</u> <u>85500</u> <u>85600</u> <u>85700</u> <u>85800</u> <u>85900</u> <u>86000</u> <u>86100</u> <u>86200</u> <u>86300</u> <u>86400</u> <u>86500</u> <u>86600</u> <u>86700</u> <u>86800</u> <u>86900</u> <u>87000</u> <u>87100</u> <u>87200</u> <u>87300</u> <u>87400</u> <u>87500</u> <u>87600</u> <u>87700</u> <u>87800</u> <u>87900</u> <u>88000</u> <u>88100</u> <u>88200</u> <u>88300</u> <u>88400</u> <u>88500</u> <u>88600</u> <u>88700</u> <u>88800</u> <u>88900</u> <u>89000</u> <u>89100</u> <u>89200</u> <u>89300</u> <u>89400</u> <u>89500</u> <u>89600</u> <u>89700</u> <u>89800</u> <u>89900</u> <u>90000</u> <u>90100</u> <u>90200</u> <u>90300</u> <u>90400</u> <u>90500</u> <u>90600</u> <u>90700</u> <u>90800</u> <u>90900</u> <u>91000</u> <u>91100</u> <u>91200</u> <u>91300</u> <u>91400</u> <u>91500</u> <u>91600</u> <u>91700</u> <u>91800</u> <u>91900</u> <u>92000</u> <u>92100</u> <u>92200</u> <u>92300</u> <u>92400</u> <u>92500</u> <u>92600</u> <u>92700</u> <u>92800</u> <u>92900</u> <u>93000</u> <u>93100</u> <u>93200</u> <u>93300</u> <u>93400</u> <u>93500</u> <u>93600</u> <u>93700</u> <u>93800</u> <u>93900</u> <u>94000</u> <u>94100</u> <u>94200</u> <u>94300</u> <u>94400</u> <u>94500</u> <u>94600</u> <u>94700</u> <u>94800</u> <u>94900</u> <u>95000</u> <u>95100</u> <u>95200</u> <u>95300</u> <u>95400</u> <u>95500</u> <u>95600</u> <u>95700</u> <u>95800</u> <u>95900</u> <u>96000</u> <u>96100</u> <u>96200</u> <u>96300</u> <u>96400</u> <u>96500</u> <u>96600</u> <u>96700</u> <u>96800</u> <u>96900</u> <u>97000</u> <u>97100</u> <u>97200</u> <u>97300</u> <u>97400</u> <u>97500</u> <u>97600</u> <u>97700</u> <u>97800</u> <u>97900</u> <u>98000</u> <u>98100</u> <u>98200</u> <u>98300</u> <u>98400</u> <u>98500</u> <u>98600</u> <u>98700</u> <u>98800</u> <u>98900</u> <u>99000</u> <u>99100</u> <u>99200</u> <u>99300</u> <u>99400</u> <u>99500</u> <u>99600</u> <u>99700</u> <u>99800</u> <u>99900</u> <u>100000</u> <u>100100</u> <u>100200</u> <u>100300</u> <u>100400</u> <u>100500</u> <u>100600</u> <u>100700</u> <u>100800</u> <u>100900</u> <u>101000</u> <u>101100</u> <u>101200</u> <u>101300</u> <u>101400</u> <u>101500</u> <u>101600</u> <u>101700</u> <u>101800</u> <u>101900</u> <u>102000</u> <u>102100</u> <u>102200</u> <u>102300</u> <u>102400</u> <u>102500</u> <u>102600</u> <u>102700</u> <u>102800</u> <u>102900</u> <u>103000</u> <u>103100</u> <u>103200</u> <u>103300</u> <u>103400</u> <u>103500</u> <u>103600</u> <u>103700</u> <u>103800</u> <u>103900</u> <u>104000</u> <u>104100</u> <u>104200</u> <u>104300</u> <u>104400</u> <u>104500</u> <u>104600</u> <u>104700</u> <u>104800</u> <u>10</u>				

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

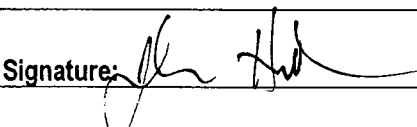
Station ID: NOI	Date: 8 Aug 04	Time (local): 0855	Project#: G005001, G005002, G004974	
Recorder: Hardin	Sampling Location (circle one): BSMP / Northstar / Liberty / Other			
Latitude (WGS84) 70° 31.6679		Longitude (WGS84) 148° 41.4653		
Field Observations and Measurements				
Wind Speed (kts): 0-5	Wind Direction: SE	Seas/Ice: calm / no ice		
Water Depth (ft): 31.7	Conductivity, Temperature, Depth (CTD): ✓			
Doppler Current: ✓	Turbidity: ✓	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics pk	Metals	Grain Size	TOC	¹³ C
04-NOI-PHC-01-PHC-5	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay (Fine) Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes (No)		H ₂ S Odor: Yes (No)		
Sediment Comments: Shore flock on top, primarily fine sand				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments: Surface, 1, 1.5, 2.5, 4, 6, 9, 12 m				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Prentki, Tretry, Hardin, Trocine, Alkire, Mertz				
Signature: [Signature]		Date: 8 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N24A	Date: 8 Aug 04	Time (local): 1102	Project # G005001 , G005002, G004974		
Recorder: Hardin		Sampling Location (circle one) BSMP / Northstar / Liberty / Other			
Latitude (WGS84) 70° 38.6646		Longitude (WGS84) 748° 39.1849			
Field Observations and Measurements					
Wind Speed (kts): 0-5		Wind Direction: SE - NE		Seas/Ice: Calm seas - Flaw ice	
Water Depth (ft): 70'		Conductivity, Temperature, Depth (CTD):			
Doppler Current:		Turbidity:		Instrument Tow:	
Comments:					
Sediment Samples					
Device: Van Veen Grab Other-				No. of Replicates	
Organics	Metals	Grain Size	TOC	¹³ C	Methyl Hg
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed					
Indications of Anoxia: Yes No			H ₂ S Odor: Yes No		
Sediment Comments:					
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other					
Large Volume Water Samples: Replicate 1 Replicate 2					
Volume filtered/processed (liters)		XAD Cartridge		Pleated Filter	
				TSS	
LV Water Comments: Surface, 1, 1.5, 2.5, 4, 6, 9, 12,					
Biota					
Amphipods	Traps Deployed:		Traps Retrieved:		Anonyx:
Clams	Number of Grabs:		Astarte:		Cyrtodaria:
Mussels/SPMD	Moorings Deployed:		Moorings Retrieved:		Mussels: SPMD:
Biota Comments:					
Quality Control Samples					
Field Blank		Equipment Blank		Trip Blank	
				Other	
Overall Comments:					
Field Personnel: Alkire, Hardin, Mertz, Prentki, Trefny, Trucine					
Signature: 				Date: 8 Aug 04	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 5(W)	Date: 8 Aug 04	Time (local): 1350	Project #: G005001 G005002, G004974	
Recorder: Harbin	Sampling Location (circle one): BSMP / Northstar / Liberty / Other			
Latitude (WGS84) 70° 27.3238		Longitude (WGS84) 148° 30.0676		
Field Observations and Measurements				
Wind Speed (kts): 0-5	Wind Direction: SE	Seas/Ice: Caln - MICE		
Water Depth (ft): 25	Conductivity, Temperature, Depth (CTD): ☒			
Doppler Current: ☒	Turbidity: ☒	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
04-5(W)-01-PHC/MT-5 ☒	☒	☒	☒	☒
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes (No)		H ₂ S Odor: Yes (No)		
Sediment Comments: Light Brown - Fine surface layer / flack on top of fine sand				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
☒ Water Comments: Surface - 1, 1.5, 2.5, 4, 6 m				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Alkire, Harbin, Mertz, Trefny, Trocine, Proutki				
Signature: [Signature]		Date: 8 Aug 04		

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 5C5a	Date: 8 Aug 04	Time (local): 1505	Project #: G005001, G005002, G004974	
Recorder: Hardin	Sampling Location (circle one): BSMP / Northstar / Liberty / Other			
Latitude (WGS84) 70° 26.0079		Longitude (WGS84) 148° 18.8205		
Field Observations and Measurements				
Wind Speed (kts): 0-5	Wind Direction: SE	Seas/Ice: Calm - No ice		
Water Depth (ft): 21	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab	Other:	No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-5C5A)-01	PHC-5			
Sediment Texture (circle all that apply):		>50% silt/clay	Fine	Coarse Sand
Indications of Anoxia: Yes (No)		H ₂ S Odor: Yes (No)	@ 75 cm	
Sediment Comments: Light Brown - silt/clay top 0.5 - 1 cm - Fine sand - gravel/sand 75 cm				
Water/Suspended Sediment Samples:				
Surface	Mid-Water	Bottom	Other	
Large Volume Water Samples:				
Replicate 1	Replicate 2			
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Alkire, Hardin, Mertz, Prentki, Tietz, -Haw Thorne				
Signature: [Signature]		Date: 8 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>52</u>	Date: <u>8 Aug 04</u>	Time (local): <u>1600</u>	Project #: <u>G005001</u> G005002, G004974	
Recorder: <u>Hardin</u>	Sampling Location (circle one): <u>B8MP</u> / Northstar / Liberty / Other			
Latitude (WGS84) <u>70° 24.3085</u>		Longitude (WGS84) <u>148° 14.0371</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>NE</u>	Seas/Ice: <u>Calm - No Ice</u>		
Water Depth (ft): <u>12.9</u>	Conductivity, Temperature, Depth (CTD): <u>✓</u>			
Doppler Current: <u>✓</u>	Turbidity: <u>✓</u>	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments: <u>Surface, 1, 1.5, 2.5, 4 ft</u>				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Atkins, Hardin, Prenzki, Mertz, Trefry, Truxine</u>				
Signature: <u>[Signature]</u>		Date: <u>8 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 5D	Date: 8 Aug 04	Time (local): 1707	Project #: G005001, G005002, G004974	
Recorder: Hardin	Sampling Location (circle one) BSMP Northstar / Liberty / Other			
Latitude (WGS84) 70° 24.4578		Longitude (WGS84) 148° 33.5676		
Field Observations and Measurements				
Wind Speed (kts): 0-5	Wind Direction: NE	Seas/Ice: Calm-No ICE		
Water Depth (ft): 5.3	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-5D-01-PHC-5 ✓	✓	✓	✓	
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Peat Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments: Fine sand silt-clay top 0.5cm - Peat 0.5cm → 1.5cm				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Al Kire, Hardin, Mertz, Prentkij Treby, Tricore				
Signature: for the		Date: 8 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>N04</u>	Date: <u>9 Aug 04</u>	Time (local): <u>0911</u>	Project #: <u>G005001</u> <u>G005002</u> <u>G004974</u>	
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP <u>Northstar</u> / Liberty / Other			
Latitude (WGS84) <u>70° 29.6787</u>		Longitude (WGS84) <u>148° 48.0977</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>S</u>	Seas/Ice: <u>calm seas, no ice</u>		
Water Depth (ft): <u>32'</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u> Other-		No. of Replicates <u>1</u>		
Organics	Metals	Grain Size	TOC	¹³ C
<u>04-N04-01-PAC-S</u> ✓	✓	✓	✓	
Sediment Texture (circle all that apply):		<u>>50% silt/clay</u>	<u>Fine</u>	Coarse Sand Gravel
Indications of Anoxia: Yes <u>(No)</u>		H ₂ S Odor: Yes <u>(No)</u>		
Sediment Comments: <u>Light brown silt/clay top 5mm, sand & gravel - sand gravel under</u>				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed: <u>1</u>	Traps Retrieved: <u>1</u>	Anonyx: <u>≈ 100m</u>	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments: <u>Traps recovered ≈ 1300</u>				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Hardin, Nantz, Prentki, Trefny</u>				
Signature: <u>[Signature]</u>		Date: <u>9 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>5B</u>	Date: <u>1 Aug 04</u>	Time (local): <u>0925</u>	Project #: <u>G005001</u> <u>G005002</u> / G004974	
Recorder: <u>Hardin</u>	Sampling Location (circle one): <u>BSMP</u> Northstar / Liberty / Other			
Latitude (WGS84) <u>70° 34.8819 8745</u>		Longitude (WGS84) <u>148° 55.1429</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>5</u>	Seas/Ice: <u>ice flow</u> <u>Calm seas - After</u>		
Water Depth (ft): <u>45</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u> Other-		No. of Replicates <u>1</u>		
Organics	Metals	Grain Size	TOC	¹³ C
<u>04-5B-01-PHC-5</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> <u>Fine</u> Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes <u>(No)</u>		H ₂ S Odor: Yes <u>(No)</u>		
Sediment Comments: <u>Fine sand - no floc on surface</u>				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed: <u>2</u>	Traps Retrieved: <u>2</u>	Anonyx: <u>2 Pw - Off-Spec</u>	
Clams	Number of Grabs:	Astarte:	Cyrtodaria: <u>Larger</u>	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments: <u>Traps @ 70° 38.34.8819 148° 55.0779 - photo taken</u>				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: <u>Traps used by 100 - recovered @ 70° 34.9119</u> <u>recovered 1157</u> <u>soak time 2:32</u> <u>148° 55.2064</u>				
Field Personnel: <u>Hardin, Mertz, Prentki, Trefry</u>				
Signature: <u>[Signature]</u>		Date: <u>9 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 5E	Date: 9 Aug 04	Time (local): 1035	Project #: G005001 , G005002, G004974	
Recorder: Hardin	Sampling Location (circle one) BSMP / Northstar / Liberty / Other			
Latitude (WGS84) 70° 38.3621		Longitude (WGS84) 149° 16.3576		
Field Observations and Measurements				
Wind Speed (kts): 0-5	Wind Direction: S	Seas/Ice: calm seas - some floe ice near		
Water Depth (ft): 58.3	Conductivity, Temperature, Depth (CTD): ☒			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-5E-01-PHC-S ☒	☒	☒	☒	☒
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments: Very thin layers of silt/clay on surface - some gravel, shell hash and clay				
Water/Suspended Sediment Samples: Surface below 2m Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Hardin, Mertz, Prentki, Treby				
Signature: JH Hardin		Date: 9 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>5A</u>	Date: <u>9 Aug 04</u>	Time (local): <u>1230</u>	Project #: <u>G005001</u> , G005002, G004974	
Recorder: <u>Hardin</u>		Sampling Location (circle one) <u>BSMP</u> / Northstar / Liberty / Other		
Latitude (WGS84) <u>70° 29.6986'</u>		Longitude (WGS84) <u>148° 46.0600</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>5</u>	Seas/Ice: <u>calm seas, no ice</u>		
Water Depth (ft): <u>35.8</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
<u>04-5A-01-PHOS</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
Sediment Texture (circle all that apply):		<u>>50% silt/clay</u>	<u>Fine</u>	Coarse Sand Gravel
Indications of Anoxia: Yes <u>(No)</u>		H ₂ S Odor: Yes <u>(No)</u>		
Sediment Comments:				
Water/Suspended Sediment Samples:				
Surface	Mid-Water	Bottom	Other	
Large Volume Water Samples:				
Replicate 1	Replicate 2			
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Hardin, Martz, Proutki, Tretry</u>				
Signature: <u>[Signature]</u>		Date: <u>9 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: N06	Date: 9 Aug 04	Time (local): 1340	Project #: G005001, G005002, G004974	
Recorder: Hardin		Sampling Location (circle one): BSMP (Northstar) Liberty / Other		
Latitude (WGS84) 70° 29.5313		Longitude (WGS84) 148° 43.2312		
Field Observations and Measurements				
Wind Speed (kts): 1-5	Wind Direction: —	Seas/Ice: calm - no ice		
Water Depth (ft): 37.4	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters) 11.6	XAD Cartridge BAT-001	Pleated Filter	TSS	
LV Water Comments: Start: 20:30 Stop: 23:55 - used (1) liter gff				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: SAMPLE ID: 04-N06-01-PHC-XAD 04-N06-01-PHC-GFF				
Field Personnel: Hardin, Mentz, Prentki, Treby Lab- Welsh/Hardin				
Signature: [Signature]			Date:	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>N13</u>	Date: <u>9 Aug 04</u>	Time (local): <u>1437</u>	Project #: <u>G005001</u> , G005002, G004974	
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / <u>Northstar</u> / Liberty / Other			
Latitude (WGS84) <u>70° 26.9832</u>		Longitude (WGS84) <u>148° 43.5749</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>calm</u>	Seas/Ice: <u>calm - no ice</u>		
Water Depth (ft): <u>12.5</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u> Other-		No. of Replicates <u>1</u>		
Organics	Metals	Grain Size	TOC	¹³ C
<u>04-N13-01-PHC-S</u> ✓	✓	✓	✓	
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes <u>No</u>		H ₂ S Odor: Yes <u>No</u>		
Sediment Comments: <u>silt clay - light brown top 2cm - gravel from >2cm - bottom grab</u>				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Hardin, Mertz, Prentki, Trefry</u>				
Signature: <u>[Signature]</u>		Date: <u>9 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>N21</u>	Date: <u>9 Aug 04</u>	Time (local): <u>1447</u>	Project#: <u>G005001</u> , G005002, G004974	
Recorder: <u>Hardin</u>		Sampling Location (circle one): BSMP (<u>Northstar</u>) / Liberty / Other		
Latitude (WGS84) <u>70° 26.8124</u>		Longitude (WGS84) <u>148° 41.7302</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>SW</u>	Seas/Ice: <u>calm - no ice</u>		
Water Depth (ft): <u>13.6</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
<u>04-N21-01-PHX-S</u>	☒	☒	☒	
Sediment Texture (circle all that apply):		<u>>50% silt/clay</u>	<u>Fine</u>	Coarse Sand Gravel
Indications of Anoxia: Yes ☐ No ☒		H ₂ S Odor: Yes ☐ No ☒		
Sediment Comments: <u>Light Brown, silt/clay (soft)</u>				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank ☒	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Jim Hardin, Mertz, Prentiss, Trefry</u>				
Signature: <u>Jim Hardin</u>		Date: <u>9 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>N15</u>	Date: <u>9 Aug 04</u>	Time (local): <u>1520</u>	Project#: <u>G005001, G005002, G004974</u>	
Recorder: <u>Hardin</u>		Sampling Location (circle one): <u>BSMP</u> / Northstar / Liberty / Other		
Latitude (WGS84) <u>70° 26.7197</u>		Longitude (WGS84) <u>170° 148° 44.5858</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>SW</u>	Seas/Ice: <u>Calm - no ice</u>		
Water Depth (ft):	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u> Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
<u>04-M5-01-PHC-5</u> ✓	✓	✓	✓	
Sediment Texture (circle all that apply):		<u>>50% silt/clay</u>	<u>Fine</u>	<u>Coarse Sand</u>
Indications of Anoxia: Yes <u>No</u>		H ₂ S Odor: Yes <u>No</u>		
Sediment Comments: <u>Sand & gravel</u>				
Water/Suspended Sediment Samples:				
Surface	Mid-Water	Bottom	Other	
Large Volume Water Samples:				
Replicate 1	Replicate 2			
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Hardin, Mertz, Prentki, Trefry</u>				
Signature: <u>[Signature]</u>		Date: <u>9 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 5F	Date: 9 Aug 04	Time (local): 1545	Project #: G005000, G005002, G004974	
Recorder: Hardin		Sampling Location (circle one): BSMP Northstar / Liberty / Other		
Latitude (WGS84) 70° 26.4946		Longitude (WGS84) 148° 49.5346		
Field Observations and Measurements				
Wind Speed (kts): 0-5	Wind Direction: SW	Seas/Ice: calm/M ice		
Water Depth (ft): 4.4	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates 1		
Organics	Metals	Grain Size	TOC	¹³ C
04-5F-01-PHC-S	☒	☒	☒	☒
Sediment Texture (circle all that apply):		>50% silt/clay	Fine	Coarse Sand Gravel
Indications of Anoxia: Yes (No)		H ₂ S Odor: Yes (No)		
Sediment Comments: light > dark brown silt/clay/fine sand - some detritus (peat)				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs: ~40	Astarte: NOT	Cyrtodaria: ?	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments: small razor clams				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Hardin, Mertz, Prontki, Trefry				
Signature: [Signature]		Date: 9 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>N14</u>	Date: <u>9 Aug 04</u>	Time (local): <u>1820</u>	Project #: <u>G005001</u> , G005002, G004974	
Recorder: <u>Hurdin</u>		Sampling Location (circle one): BSMP / <u>Northstar</u> / Liberty / Other		
Latitude (WGS84) <u>70° 25.9829</u>		Longitude (WGS84) <u>148° 40.3584</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>SW</u>	Seas/Ice: <u>calm - no ice</u>		
Water Depth (ft): <u>9.1</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
<u>04-N14-01-PHE-5</u> ✓	✓	✓	✓	
Sediment Texture (circle all that apply): <u>>50% silt/clay</u>		<u>(Fine)</u>	Coarse Sand Gravel	Shell Hash
Indications of Anoxia: Yes <u>(No)</u>		H ₂ S Odor: Yes <u>(No)</u>	Mixed	
Sediment Comments:				
Water/Suspended Sediment Samples:				
Surface	Mid-Water	Bottom	Other	
Large Volume Water Samples:				
Replicate 1	Replicate 2			
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Hurdin, Mertz, Prentiss, Trefry</u>				
Signature: <u>[Signature]</u>		Date: <u>9 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

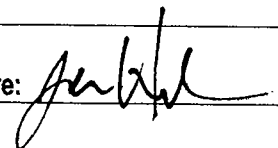
Station ID: N05	Date: 10 Aug 04	Time (local): 1441	Project #: G005001, G005002, G004974	
Recorder: Walsh / Hardin		Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 29.6320		Longitude (WGS84) 148° 44.7105		
Field Observations and Measurements				
Wind Speed (kts): 5-10 kts	Wind Direction: W	Seas/Ice: calm - M ice		
Water Depth (ft): 40.4	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): ☒ >50% silt/clay ☐ Fine ☐ Coarse Sand Gravel ☐ Shell Hash ☐ Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: 100.1 Replicate 1 Replicate 2				
Volume filtered/processed (liters) 100.04 L	XAD Cartridge ☒	Pleated Filter ☒	TSS	
LV Water Comments: Start @ 1640 Finish @ 2007				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: Mentz, Walsh, Altore, Hardin				
Signature: [Signature]		Date: 10 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: SH	Date: 11 Aug 04	Time (local): 11 25	Project #: G005001, G005002, G004974	
Recorder: Walsh		Sampling Location (circle one) BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 22.2210		Longitude (WGS84) 147° 47.8581		
Field Observations and Measurements				
Wind Speed (kts): Calm.	Wind Direction: W	Seas/Ice: Calm / no ice		
Water Depth (ft): 22.0 ft	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other:		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters) 101.0025	XAD Cartridge ☒	Glass Fiber Pleated Filter ☒	TSS	
LV Water Comments: start - 1155 finish - 1545				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: 04-SH-01-PHC-XAD = AXYS = BAT-004 04-SH-01-PHC-GFF 04-SH-01-PHC-FIC				
Field Personnel: Hardin, Walsh, Lawley, Mertz				
Signature: 		Date: 11 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>LOLA</u>	Date: <u>11 Aug 04</u>	Time (local): <u>1310</u>	Project #: <u>G005001</u> G005002, G004974	
Recorder: <u>Hardin</u>		Sampling Location (circle one): BSMP / Northstar <u>Liberty</u> / Other		
Latitude (WGS84) <u>70° 18.9281</u>		Longitude (WGS84) <u>147° 33.9044</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>Calm</u>	Seas/Ice: <u>Calm seas - no ice</u>		
Water Depth (ft): <u>26.9</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: <u>Van Veen Grab</u> Other-		No. of Replicates <u>1</u>		
Organics	Metals	Grain Size	TOC	¹³ C
<u>04-LOLA-01-PHC-5</u> ✓	✓	✓	✓	
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes <u>(No)</u>		H ₂ S Odor: Yes <u>(No)</u>		
Sediment Comments: <u>Light Brown silt/clay w/ shell hash below 2cm in fine clay</u>				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank ✓	Equipment Blank ✓	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Hardin, Lawley, Mertz, Walsh</u>				
Signature: <u>[Signature]</u>		Date: <u>11 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 3A	Date: 11 Aug 04	Time (local): 1742	Project #: G005001, G005002, G004974	
Recorder: Hardin		Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) 70° 16.9437		Longitude (WGS84) 147° 05.5197		
Field Observations and Measurements				
Wind Speed (kts): 0-5	Wind Direction: N	Seas/Ice: 4ft, no ice		
Water Depth (ft): 19.1	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters) 100.5	XAD Cartridge ☒	Class Fiber Pleated Filter ☒	TSS	
LV Water Comments: Start: 1756 Finish 21:22				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: 04-3A-01-PHC-XAD BAT-005 (AXYS ID)				
04-3A-01-PHC-GFF L7072-14 (AXYS ID)				
04-3A-01-PHC-FIL				
Field Personnel: Hardin, Mertz, Conley, Walsh				
Signature: [Signature] Date: 11 Aug 04				

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: 3A	Date: 12 Aug 04	Time (local): 1413	Project #: G005001, G005002, G004974		
Recorder: Hardin		Sampling Location (circle one): BSMP / Northstar / Liberty / Other			
Latitude (WGS84) 70° 16. 9372		Longitude (WGS84) 147 05.5212			
Field Observations and Measurements					
Wind Speed (kts): 10-15		Wind Direction: NE		Seas/Ice: 2F+, M ice	
Water Depth (ft): 18.7		Conductivity, Temperature, Depth (CTD):			
Doppler Current:		Turbidity:		Instrument Tow:	
Comments:					
Sediment Samples					
Device: Van Veen Grab Other-			No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C	Methyl Hg
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed					
Indications of Anoxia: Yes No			H ₂ S Odor: Yes No		
Sediment Comments:					
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other					
Large Volume Water Samples: Replicate 1 Replicate 2					
Volume filtered/processed (liters)		XAD Cartridge		Pleated Filter	TSS
LV Water Comments:					
Biota					
Amphipods	Traps Deployed:		Traps Retrieved:		Anonyx:
Clams	Number of Grabs: 20		Astarte: ~17		Cyrtodaria:
Mussels/SPMD	Moorings Deployed:		Moorings Retrieved:	Mussels:	SPMD:
Biota Comments: finish @ 1515					
Quality Control Samples					
Field Blank	Equipment Blank		Trip Blank		Other
Overall Comments:					
Field Personnel: Hardin, Lawley, Mertz, Cebalch					
Signature: [Signature]				Date: 12 Aug 04	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: L17	Date: 13 Aug 04	Time (local): 1305	Project #: G005001, G005002 , G004974		
Recorder: Hardin		Sampling Location (circle one): BSMP / Northstar / Liberty / Other			
Latitude (WGS84) 70° 23.6090		Longitude (WGS84) 147° 32.9280			
Field Observations and Measurements					
Wind Speed (kts): 5-10		Wind Direction: S		Seas/Ice: 1ft, some flow ice	
Water Depth (ft): 23.1		Conductivity, Temperature, Depth (CTD):			
Doppler Current:		Turbidity:		Instrument Tow:	
Comments:					
Sediment Samples					
Device: Van Veen Grab Other-			No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C	Methyl Hg
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed					
Indications of Anoxia: Yes No			H ₂ S Odor: Yes No		
Sediment Comments:					
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other					
Large Volume Water Samples: Replicate 1 Replicate 2					
Volume filtered/processed (liters)		XAD Cartridge		Pleated Filter	TSS
LV Water Comments:					
Biota					
Amphipods	Traps Deployed: 1	Traps Retrieved: 1		Anonyx: —	
Clams	Number of Grabs:	Astarte:		Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:		Mussels:	SPMD:
Biota Comments: Trap retrieved on 14 Aug - very few amphipods.					
Quality Control Samples @ 10:48					
Field Blank	Equipment Blank	Trip Blank		Other	
Overall Comments:					
Field Personnel: Hardin, Lawley, Montz, Welsh					
Signature: [Signature]			Date: 13 Aug 04		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>L18</u>	Date: <u>13 Aug 04</u>	Time (local): <u>1355</u>	Project #: G005001 <u>G005002</u> G004974	
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / Northstar / <u>Liberty</u> / Other			
Latitude (WGS84) <u>70° 19.3829</u>		Longitude (WGS84) <u>147° 45.6601</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>5 to 10-20</u>	Wind Direction: <u>NE</u>	Seas/Ice: <u>1 ft, no ice</u>		
Water Depth (ft): <u>141 ft</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): >50% silt/clay Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: Replicate 1 Replicate 2				
Volume filtered/processed (liters)	XAD Cartridge	Pleated Filter	TSS	
LV Water Comments:				
Biota				
Amphipods	Traps Deployed: <u>1</u>	Traps Retrieved: <u>1</u>	Anonyx: <u>2 20mm</u>	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments: <u>Retrieved @ 1905 hrs</u>				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments: <u>Return to Endicott to filter water - winds pick up to 15-20 kts, seas 2-3 ft. Too rough for trawls or mooring recovery</u>				
Field Personnel: <u>Hardin, Lowley, Mertz, Uhlsh</u>				
Signature: <u>[Signature]</u>		Date: <u>13 Aug 04</u>		

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Station Log

Station ID: <u>LO6</u>	Date: <u>13 Aug 04</u>	Time (local): <u>1800</u>	Project #: G005001 <u>G005002</u> <u>G004974</u>	
Recorder: <u>Hardin</u>		Sampling Location (circle one): BSMP / Northstar <u>Liberty</u> Other		
Latitude (WGS84) <u>70° 16.9155</u>		Longitude (WGS84) <u>147° 34.0840</u>		
Field Observations and Measurements				
Wind Speed (kts): <u>15-20</u>	Wind Direction: <u>NW</u>	Seas/Ice: <u>2-3 ft / none</u>		
Water Depth (ft): <u>21.0</u>	Conductivity, Temperature, Depth (CTD):			
Doppler Current:	Turbidity:	Instrument Tow:		
Comments:				
Sediment Samples				
Device: Van Veen Grab Other-		No. of Replicates		
Organics	Metals	Grain Size	TOC	¹³ C
Sediment Texture (circle all that apply): <u>>50% silt/clay</u> Fine Coarse Sand Gravel Shell Hash Mixed				
Indications of Anoxia: Yes No		H ₂ S Odor: Yes No		
Sediment Comments:				
Water/Suspended Sediment Samples: Surface Mid-Water Bottom Other				
Large Volume Water Samples: <u>Replicate 1</u> Replicate 2				
Volume filtered/processed (liters) <u>96.5</u>	XAD Cartridge <u>BAT-007</u>	<u>Glass Fiber</u> Pleated Filter <u>L7072-15</u>	TSS	
LV Water Comments: <u>Start @ 2015 finish 1150 2350</u> <u>JH</u>				
Biota				
Amphipods	Traps Deployed:	Traps Retrieved:	Anonyx:	
Clams	Number of Grabs:	Astarte:	Cyrtodaria:	
Mussels/SPMD	Moorings Deployed:	Moorings Retrieved:	Mussels:	SPMD:
Biota Comments:				
Quality Control Samples				
Field Blank	Equipment Blank	Trip Blank	Other	
Overall Comments:				
Field Personnel: <u>Hardin, Cawley, Mertz, Walsh</u>				
Signature: <u>[Signature]</u>		Date: <u>13 Aug 04</u>		

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Summer 2004 Station Log

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Attachment 3: 2002 Fish Sampling Logs

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>PBS</u>	Date: <u>06 Aug 04</u>	Time (local): <u>1920 1720</u>	Project #: G005002
Recorder: <u>Hardin</u>	Sampling Location (circle one): <u>(BSMP)</u> / Northstar / Liberty / Other		
Latitude (WGS84) <u>(see database)</u>		Longitude (WGS84) <u>(see database)</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>calm</u>	Wind Direction: <u>—</u>	Seas/Ice: <u>calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>(Fyke Net)</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>(Gills)</u> <u>(Gut)</u> <u>(Kidney)</u> <u>(Liver)</u>	Other
<u>04-PBS-01-CYP-T</u>			
Fish Species: <u>Arctic Cisco</u>	Fish Length (cm): <u>8.8</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>No sex observed</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>(Gills)</u> <u>(Gut)</u> <u>(Kidney)</u> <u>(Liver)</u>	Other
<u>04-PBS-02-CYP-T</u>			
Fish Species: <u>Brook Whitefish</u>	Fish Length (cm): <u>9.8</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Immature</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>(Gills)</u> <u>(Gut)</u> <u>(Kidney)</u> <u>(Liver)</u>	Other
<u>04-PBS-03-PH-Facet-T</u> <u>04-PBS-03-CYP-T</u>			
Fish Species: <u>Least Cisco</u>	Fish Length (cm): <u>18.8</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Immature</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>(Gills)</u> <u>(Gut)</u> <u>(Kidney)</u> <u>(Liver)</u>	Other
<u>✓</u> <u>✓</u> <u>04-PBS-04-CYP-T</u>			
Fish Species: <u>Arctic Cisco</u>	Fish Length (cm): <u>19.8</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Overall Comments:			
Field Personnel: <u>Hardin, Lowry, Walsh</u>			
Signature: <u>[Signature]</u>		Date: <u>6 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log *1750*

Station ID: <i>PBS</i>	Date: <i>6 Aug 04</i>	Time (local): <i>17:50</i>	Project #: G005002
Recorder: <i>Hardin</i>	Sampling Location (circle one): <u>BSMP</u> / Northstar / Liberty / Other		
Latitude (WGS84) <i>see database</i>		Longitude (WGS84) <i>see database</i>	
Field Observations and Measurements			
Wind Speed (kts): <i>calm</i>	Wind Direction: <i>—</i>	Seas/Ice: <i>calm</i>	Water Depth (ft): <i>3</i>
Comments:			
Device: <u>Fyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<i>✓</i>	<i>✓</i>	<i>04-PBS-05-CYP-7</i>	
Fish Species: <i>Least Cisco</i>	Fish Length (cm): <i>22.3</i>	Number of fish in sample: <i>1</i>	
Fish Comments: <i>Female</i>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills</u> <u>Gut</u> <u>Kidney</u> <u>Liver</u> Other
<i>✓</i>	<i>✓</i>	<i>04-PBS-06-CYP-7</i>	
Fish Species: <i>Least Cisco</i>	Fish Length (cm): <i>29.8</i>	Number of fish in sample: <i>1</i>	
Fish Comments: <i>Female</i>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills</u> <u>Gut</u> <u>Kidney</u> <u>Liver</u> Other
<i>✓</i>	<i>—</i>	<i>04-PBS-07-CYP-7</i>	
Fish Species: <i>Brooklet fish</i>	Fish Length (cm): <i>16.2</i>	Number of fish in sample: <i>1</i>	
Fish Comments: <i>Bile lost - Immature</i>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills</u> <u>Gut</u> <u>Kidney</u> <u>Liver</u> Other
<i>✓</i>	<i>✓</i>	<i>04-PBS-08-CYP-7</i>	
Fish Species: <i>Arctic Cisco</i>	Fish Length (cm): <i>23.5</i>	Number of fish in sample: <i>1</i>	
Fish Comments: <i>Sex indeterminate</i>			
Overall Comments:			
Field Personnel: <i>Hardin, Lawley, Walsh</i>			
Signature: <i>[Signature]</i>		Date: <i>6 Aug 04</i>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>PBS</u>	Date: <u>06 Aug 04</u>	Time (local): <u>1843</u>	Project #: <u>G005002</u>
Recorder: <u>Hardin</u>	Sampling Location (circle one): <u>BSMP</u> / Northstar / Liberty / Other		
Latitude (WGS84) <u>See database</u>		Longitude (WGS84) <u>See database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>Calm</u>	Wind Direction: <u>—</u>	Seas/Ice: <u>Calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Fyke Net</u>	<u>Otter Trawl</u>	<u>Other-</u>	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-PBS-09-CYP-7</u>	
Fish Species: <u>Broad Whitefish</u>	Fish Length (cm): <u>20.8</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Sex indeterminate Bile contaminated w/ blood (but collected)</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓ (small amt)</u>	<u>04-PBS-10-CYP-7</u>	
Fish Species: <u>Broad Whitefish</u>	Fish Length (cm): <u>15.5</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-PBS-11-CYP-7</u>	
Fish Species: <u>Broad Whitefish</u>	Fish Length (cm): <u>15.3</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-PBS-12-CYP-7</u>	
Fish Species: <u>Least Cisco</u>	Fish Length (cm): <u>21.3</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Overall Comments:			
Field Personnel: <u>Hardin, Lawley, Walsh</u>			
Signature: <u>[Signature]</u>		Date: <u>6 Aug 04</u>	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>PBS</u>	Date: <u>6 Aug 04</u>	Time (local): <u>18:47 1941</u>	Project #: G005002
Recorder: <u>Hardin</u>	Sampling Location (circle one): <u>BSMP</u> / Northstar / Liberty / Other		
Latitude (WGS84) <u>see database</u>		Longitude (WGS84) <u>see database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>Calm</u>	Wind Direction: <u>—</u>	Seas/Ice: <u>Calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Fyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>✓</u>	<u>04-PBS-13-CYP-T</u>	
Fish Species: <u>Broad Whitefish</u>		Fish Length (cm): <u>15.5</u>	Number of fish in sample: <u>1</u>
Fish Comments: <u>sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>✓</u>	<u>04-PBS-14-CYP-T</u>	
Fish Species: <u>Broad Whitefish</u>		Fish Length (cm): <u>16.1</u>	Number of fish in sample: <u>1</u>
Fish Comments: <u>sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>—</u>	<u>04-PBS-15-CYP-T</u>	
Fish Species: <u>Broad Whitefish</u>		Fish Length (cm): <u>15.2</u>	Number of fish in sample: <u>1</u>
Fish Comments: <u>sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>—</u>	<u>—</u>	<u>04-PBS-15-CYP-T</u>	
Fish Species: <u>Broad Whitefish</u>		Fish Length (cm): <u>9.5</u>	Number of fish in sample: <u>1</u>
Fish Comments: <u>too small for tissue or bile</u>			
Overall Comments:			
Field Personnel: <u>Hardin, Lawley, Walsh</u>			
Signature: <u>[Signature]</u>		Date: <u>6 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>PBS</u>	Date: <u>6 Aug 04</u>	Time (local): <u>19:55</u>	Project #: <u>G005002</u>
Recorder: <u>Hardin</u>	Sampling Location (circle one): <u>BSMP</u> Northstar / Liberty / Other		
Latitude (WGS84) <u>see database</u>	Longitude (WGS84) <u>see database</u>		
Field Observations and Measurements			
Wind Speed (kts): <u>calm</u>	Wind Direction: <u>—</u>	Seas/Ice: <u>calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Fyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-PBS-17-CYP-T</u>	
Fish Species: <u>Broad Whitefish</u>	Fish Length (cm): <u>14.2</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-PBS-18-CYP-T</u>	
Fish Species: <u>Broad Whitefish</u>	Fish Length (cm): <u>13.8</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-PBS-19-CYP-T</u>	
Fish Species: <u>Four Horn Sculpin</u>	Fish Length (cm): <u>22.0</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female - green eggs</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>—</u>	<u>04-PBS-20-CYP-T</u>	
Fish Species: <u>Four Horn Sculpin</u>	Fish Length (cm): <u>15.5</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female - NO BLUE</u>			
Overall Comments:			
Field Personnel: <u>Hardin, Lawley, Walsh</u>			
Signature: <u>[Signature]</u>		Date: <u>6 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: PBS	Date: 7 Aug 04	Time (local): 1846	Project #: G005002
Recorder: Harden	Sampling Location (circle one) BSMP / Northstar / Liberty / Other		
Latitude (WGS84) (see database)		Longitude (WGS84) (see database)	
Field Observations and Measurements			
Wind Speed (kts): calm	Wind Direction: -	Seas/Ice: calm	Water Depth (ft): 3
Comments:			
Device: Fyke Net	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples) Gills Gut Kidney Liver	Other
✓	✓	04-PBS-25-CYP-7	
Fish Species: Least Cisco	Fish Length (cm): 19.3	Number of fish in sample: 1	
Fish Comments: sex indeterminate			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) Gills Gut Kidney Liver	Other
✓	✓	04-PBS-26-CYP-7	
Fish Species: Arctic Char	Fish Length (cm): 12.2	Number of fish in sample: 1	
Fish Comments: Sex indeterminate - very small amount of bile			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) Gills Gut Kidney Liver	Other
✓	✓	04-PBS-27-CYP-7	
Fish Species: 4horn sculpin	Fish Length (cm): 14.5	Number of fish in sample: 1	
Fish Comments: Female			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) Gills Gut Kidney Liver	Other
✓	✓	04-PBS-28-CYP-7	
Fish Species: 4horn Sculpin	Fish Length (cm): 13.8	Number of fish in sample: 1	
Fish Comments: Female - small amount of bile			
Overall Comments:			
Field Personnel: Harden, Carkey			
Signature: [Signature]		Date: 7 Aug 04	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>PBS</u>	Date: <u>7 Aug 04</u>	Time (local): <u>19:10</u>	Project #: <u>G005002</u>
Recorder: <u>Hardin</u>	Sampling Location (circle one): <u>BSMP</u> / Northstar / Liberty / Other		
Latitude (WGS84) <u>(see database)</u>		Longitude (WGS84) <u>(see database)</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>calm</u>	Wind Direction: <u>—</u>	Seas/Ice: <u>calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Fyke Net</u>		<u>Otter Trawl</u>	Other- <u>—</u>
No. of Replicates			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills Gut Kidney Liver</u>
<u>—</u>	<u>—</u>	<u>04-PBS-29-CYP-7</u>	
Fish Species: <u>4 Horn Sculpin</u>		Fish Length (cm): <u>11.0</u>	Number of fish in sample: <u>1</u>
Fish Comments: <u>Sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills Gut Kidney Liver</u>
<u>—</u>	<u>—</u>	<u>04-PBS-30-CYP-7</u>	
Fish Species: <u>4 Horn Sculpin</u>		Fish Length (cm): <u>11.3</u>	Number of fish in sample: <u>1</u>
Fish Comments: <u>sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills Gut Kidney Liver</u>
<u>—</u>	<u>—</u>	<u>—</u>	
Fish Species:		Fish Length (cm):	Number of fish in sample:
Fish Comments:			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills Gut Kidney Liver</u>
<u>—</u>	<u>—</u>	<u>—</u>	
Fish Species:		Fish Length (cm):	Number of fish in sample:
Fish Comments:			
Overall Comments:			
Field Personnel: <u>Hardin, Cawley</u>			
Signature: <u>[Signature]</u>		Date: <u>7 Aug 04</u>	

Battelle

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>SIS</u>	Date: <u>8 Aug 04</u>	Time (local): <u>11⁰⁰ 1047</u>	Project #: <u>G005002</u>
Recorder: <u>Mike Walsh</u>	Sampling Location (circle one): <u>BSMP</u> / Northstar / Liberty / Other		
Latitude (WGS84) <u>(in database)</u>		Longitude (WGS84) <u>(in database)</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>Calm</u>	Wind Direction: <u>—</u>	Seas/Ice: <u>Calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Fyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills Gut Kidney Liver</u> Other
<u>✓</u>	<u>✓</u>	<u>04-SI-36⁰⁴-CYP-T</u>	
Fish Species: <u>least Cisco</u>	Fish Length (cm): <u>26.0</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills Gut Kidney Liver</u> Other
<u>✓</u>	<u>✓</u>	<u>04-SI-32⁰⁴-CYP-T</u>	
Fish Species: <u>Arctic Cisco</u>	Fish Length (cm): <u>25.5⁰⁴</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Male</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills Gut Kidney Liver</u> Other
<u>✓</u>	<u>✓</u>	<u>04-SI-33⁰⁴-CYP-T</u>	
Fish Species: <u>Arctic Cisco</u>	Fish Length (cm): <u>30.5⁰⁴</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills Gut Kidney Liver</u> Other
<u>✓</u>	<u>✓</u>	<u>04-SI-35⁰⁴-CYP-T</u>	
Fish Species: <u>Arctic Cisco</u>	Fish Length (cm): <u>26.8⁰⁴</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Sex indeterminate</u>			
Overall Comments:			
Field Personnel: <u>Walsh, Lawley, Delfosse</u>			
Signature: <u>Michael Walsh</u>		Date: <u>8 Aug 04</u>	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>SIS</u>	Date: <u>8 Aug 04</u>	Time (local): <u>1116</u>	Project #: <u>G005002</u>
Recorder: <u>Mike Walsh</u>	Sampling Location (circle one): <u>BSMP</u> / <u>Northstar</u> / Liberty / Other		
Latitude (WGS84) <u>(in database)</u>		Longitude (WGS84) <u>(in database)</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>calm</u>	Wind Direction: <u>-</u>	Seas/Ice: <u>calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>(Fyke Net)</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-35^{new} 04-SI-35-CYP-T</u>	
Fish Species: <u>least cisco</u>	Fish Length (cm): <u>25.9⁰⁵ 04</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-SI-36-CYP-T</u>	
Fish Species: <u>Arctic cisco</u>	Fish Length (cm): <u>29.5⁰⁴ 05</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-SI-38-CYP-T</u>	
Fish Species: <u>least cisco</u>	Fish Length (cm): <u>27.7⁰⁴ 05</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>male</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-SI-38-CYP-T</u>	
Fish Species: <u>Arctic cisco</u>	Fish Length (cm): <u>32.3⁰⁴ 05</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female / Blood mixed with bile</u>			
Overall Comments:			
Field Personnel: <u>Walsh, Lawley, Delfosse</u>			
Signature: <u>Michael Walsh</u>		Date: <u>8 Aug 04</u>	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>SFS</u>	Date: <u>8 Aug 04</u>	Time (local): <u>1140</u>	Project #: <u>G005002</u>
Recorder: <u>Mike Walsh</u>	Sampling Location (circle one): <u>BSMP</u> / <u>Northstar</u> / Liberty / Other		
Latitude (WGS84) <u>(in database)</u>	Longitude (WGS84) <u>(in database)</u>		
Field Observations and Measurements			
Wind Speed (kts): <u>Calm</u>	Wind Direction: <u>-</u>	Seas/Ice: <u>Calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Eyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills Gut Kidney Liver</u> Other
<u>✓</u>	<u>✓</u>	<u>04-SI-31-CYP-T</u>	
Fish Species: <u>Arctic Cisco</u>	Fish Length (cm): <u>30.8</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Male</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills Gut Kidney Liver</u> Other
<u>✓</u>	<u>✓</u>	<u>04-SI-40-CYP-T</u>	
Fish Species: <u>Arctic Cisco</u>	Fish Length (cm): <u>31.2</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills Gut Kidney Liver</u> Other
<u>✓</u>	<u>✓</u>	<u>04-SI-41-CYP-T</u>	
Fish Species: <u>Arctic Cisco</u>	Fish Length (cm): <u>25.7</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>sex Indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	<u>Gills Gut Kidney Liver</u> Other
<u>✓</u>	<u>✓</u>	<u>04-SI-42-CYP-T</u>	
Fish Species: <u>Arctic Cisco</u>	Fish Length (cm): <u>27.2</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>sex Indeterminate</u>			
Overall Comments:			
Field Personnel: <u>Walsh, Lawley, Delfosse</u>			
Signature: <u>Michael Walsh</u>		Date: <u>8 Aug 04</u>	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>SIS</u>	Date: <u>8 Aug 04</u>	Time (local): <u>1157</u>	Project #: <u>G005002</u>
Recorder: <u>Mike Walsh</u>	Sampling Location (circle one): <u>BSMP</u> / <u>Northstar</u> / Liberty / Other		
Latitude (WGS84) <u>(in database)</u>		Longitude (WGS84) <u>(in database)</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>Calms</u>	Wind Direction: <u>-</u>	Seas/Ice: <u>calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Eyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-SI-43-CYP-T</u>	
Fish Species: <u>least Cisco</u>	Fish Length (cm): <u>23.8^{13.0H}</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>-</u>	<u>04-SI-43-CYP-T</u>	
Fish Species: <u>Sculpin</u>	Fish Length (cm): <u>15.5</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female - no bile retrieved</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>-</u>	<u>04-SI-43-CYP-T</u>	
Fish Species: <u>Sculpin</u>	Fish Length (cm): <u>14.3^{15.6H}</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>female - no bile retrieved</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments:			
Overall Comments:			
Field Personnel: <u>Walsh, Lawley, Delfosse</u>			
Signature: <u>Michael Walsh</u>		Date: <u>8 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>SIS</u>	Date: <u>8 Aug 04</u>	Time (local): <u>1921</u>	Project #: G005002
Recorder: <u>Hardin</u>	Sampling Location (circle one): <u>BSMP</u> / Northstar / Liberty / Other		
Latitude (WGS84) <u>see database</u>		Longitude (WGS84) <u>see database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>SE</u>	Seas/Ice: <u>calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Fyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-SI-45-CYP-T</u>	
Fish Species: <u>Least Cisco</u>	Fish Length (cm): <u>13.3¹⁶ gH</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Bile sample minimal, sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>—</u>	<u>04-SI-47-CYP-T</u>	
Fish Species: <u>Arctic Cod</u>	Fish Length (cm): <u>13.2¹⁷ gH</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>No bile collected, sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>—</u>	<u>04-SI-48-CYP-T</u>	
Fish Species: <u>Least Cisco</u>	Fish Length (cm): <u>14.0¹⁸ gH</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>No bile collected, sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments:			
Overall Comments:			
Field Personnel: <u>Walsh, Lemley, DelSisse, Hardin (in lab)</u>			
Signature: <u>Ju Hall</u>		Date: <u>8 Aug 04</u>	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: SIS	Date: 9 Aug 04	Time (local): 112132	Project #: G005002
Recorder: Mike Walsh	Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) see database		Longitude (WGS84) see database	
Field Observations and Measurements			
Wind Speed (kts): Calu	Wind Direction: SW	Seas/Ice: Calu	Water Depth (ft):
Comments:			
Device: Cyke Net	Otter Trawl	Other-	No. of Replicates
Organics/Metals ☒	Bile (FACS) ☒	CYP1A (circle samples) Gills Gut Kidney Liver	Other
04-SI-49-CYP-T			
Fish Species: Arctic Cisco	Fish Length (cm): 26.5	Number of fish in sample: 1	
Fish Comments: Sex Indeterminate			
Organics/Metals ☒	Bile (FACS) ☒	CYP1A (circle samples) Gills Gut Kidney Liver	Other
04-SI-50-CYP-T			
Fish Species: least Cisco	Fish Length (cm): 27.6	Number of fish in sample: 1	
Fish Comments: Female			
Organics/Metals ☒	Bile (FACS) ☒	CYP1A (circle samples) Gills Gut Kidney Liver	Other
04-SI-51-CYP-T			
Fish Species: Arctic Cisco	Fish Length (cm): 29.1	Number of fish in sample: 1	
Fish Comments: Male			
Organics/Metals ☒	Bile (FACS) ☒	CYP1A (circle samples) Gills Gut Kidney Liver	Other
04-SI-52-CYP-T			
Fish Species: Arctic Cisco	Fish Length (cm): 27.5	Number of fish in sample: 1	
Fish Comments: Sex Indeterminate			
Overall Comments:			
Field Personnel: Walsh, Lawley Delfosse			
Signature: Michael Walsh		Date: 9 Aug 04	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>SIS</u>	Date: <u>9 Aug 04</u>	Time (local): <u>139:339</u>	Project #: <u>G005002</u>
Recorder: <u>Mike Walsh</u>	Sampling Location (circle one): <u>BSMP</u> / Northstar / Liberty / Other		
Latitude (WGS84) <u>see database</u>		Longitude (WGS84) <u>see database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>calm</u>	Wind Direction: <u>SW</u>	Seas/Ice: <u>calm</u>	Water Depth (ft):
Comments:			
Device: <u>Fyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-SI-53-CYP-T</u>	
Fish Species: <u>Arctic Cisco</u>	Fish Length (cm): <u>33.2</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-SI-84-CYP-T</u>	
Fish Species: <u>Arctic Cisco</u>	Fish Length (cm): <u>26.9</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>sex Indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-SI-55-CYP-T</u>	
Fish Species: <u>least Cisco</u>	Fish Length (cm): <u>26.0</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-SI-86-CYP-T</u>	
Fish Species: <u>least Cisco</u>	Fish Length (cm): <u>25.1</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Overall Comments:			
Field Personnel: <u>Walsh, Lawley, Delfosse</u>			
Signature: <u>Michael Walsh</u>		Date: <u>9 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>SIS</u>	Date: <u>9 Aug 04</u>	Time (local): <u>1402</u>	Project #: <u>G005002</u>
Recorder: <u>Mike Walsh</u>	Sampling Location (circle one): BSMP / <u>Northstar</u> / Liberty / Other		
Latitude (WGS84) <u>see database</u>		Longitude (WGS84) <u>see database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>Calm</u>	Wind Direction: <u>SW</u>	Seas/Ice: <u>Calm</u>	Water Depth (ft):
Comments:			
Device: <u>Eyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-SI-58-CYP-T</u>	
Fish Species: <u>Arctic Cisco</u>		Fish Length (cm): <u>25.7</u>	Number of fish in sample: <u>1</u>
Fish Comments: <u>Sex Indeterminate / needle end of syringe dropped into 1-Bm bile vial</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-SI-58-CYP-T</u>	
Fish Species: <u>Arctic Cisco</u>		Fish Length (cm): <u>20.0</u>	Number of fish in sample: <u>1</u>
Fish Comments: <u>Sex Indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>mw</u>	<u>mw</u>	<u>04-SI-59-CYP-T</u>	
Fish Species: <u>Arctic Cod</u>		Fish Length (cm): <u>7.3</u>	Number of fish in sample: <u>1</u>
Fish Comments: <u>Sex Indeterminate / whole fish in formalin</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>mw</u>	<u>mw</u>	<u>04-SI-59-CYP-T</u>	
Fish Species: <u>Arctic Cod</u>		Fish Length (cm): <u>11.0</u>	Number of fish in sample: <u>1</u>
Fish Comments: <u>Sex Indeterminate / whole fish in formalin</u>			
Overall Comments:			
Field Personnel: <u>Walsh, Lawley, Delfosse</u>			
Signature: <u>Michael Walsh</u>		Date: <u>9 Aug 04</u>	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>SIS</u>	Date: <u>9 Aug 04</u>	Time (local): <u>1426</u>	Project #: G005002
Recorder: <u>Mike Walsh</u>	Sampling Location (circle one): BSMP (<u>Northstar</u>) Liberty / Other		
Latitude (WGS84) <u>see database</u>		Longitude (WGS84) <u>see database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>calm</u>	Wind Direction: <u>SW</u>	Seas/Ice: <u>calm</u>	Water Depth (ft):
Comments:			
Device: (<u>Fyke Net</u>)	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>-</u>	<u>-</u>	<u>04-SI-6T-CYP-T</u>	
Fish Species: <u>Arctic Cod</u>	Fish Length (cm): <u>8.8</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Sex Indeterminate / whole fish in formalin</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments:			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments:			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments:			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments:			
Overall Comments:			
Field Personnel: <u>Walsh, Lawley, Delfosse</u>			
Signature: <u>Michael Walsh</u>		Date: <u>9 Aug 04</u>	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>T6V</u>	Date: <u>12 Aug 04</u>	Time (local): <u>1105</u>	Project #: G005002
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / Northstar / Liberty / <u>Other</u>		
Latitude (WGS84) <u>see database</u>		Longitude (WGS84) <u>see database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>5-10</u>	Wind Direction: <u>E</u>	Seas/Ice: <u>6ft No ice</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Fyke Net</u>	Otter Trawl	Other-	No. of Replicates <u>1</u>
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-T6V-01-CYP-T</u>	
Fish Species: <u>Arctic Char</u>	Fish Length (cm): <u>22.1</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Male</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-T6V-02-CYP-T</u>	
Fish Species: <u>Least Cisco</u>	Fish Length (cm): <u>32.4</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-T6V-03-CYP-T</u>	
Fish Species: <u>Least Cisco</u>	Fish Length (cm): <u>31.2</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-T6V-04-CYP-T</u>	
Fish Species: <u>Arctic Flounder</u>	Fish Length (cm): <u>19.5</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Overall Comments:			
Field Personnel: <u>Hardin, Walsh, Lanley, Mertz</u>			
Signature: <u>[Signature]</u>		Date: <u>12 Aug 04</u>	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>76V</u>	Date: <u>12 Aug 04</u>	Time (local): <u>1151</u>	Project #: G005002
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / Northstar / Liberty / <u>Other</u>		
Latitude (WGS84): <u>see database</u>		Longitude (WGS84): <u>see database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>5-10</u>	Wind Direction: <u>E</u>	Seas/Ice: <u>calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Devices: <u>Fyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-76V-05-CYP-7</u>	
Fish Species: <u>Arctic Flounder</u>	Fish Length (cm): <u>16.0</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u> (cANIMIDA)	<u>04-76V-06-CYP-7</u>	
Fish Species: <u>Arctic Flounder</u>	Fish Length (cm): <u>11.4</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-76V-07-CYP-7</u>	
Fish Species: <u>Thorn Sculpin</u>	Fish Length (cm): <u>18.2</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female - 1 sexed in gut</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>✓</u>	<u>✓</u>	<u>04-76V-08-CYP-7</u>	
Fish Species: <u>Thorn Sculpin</u>	Fish Length (cm): <u>12.8</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Male</u>			
Overall Comments:			
Field Personnel: <u>Hardin, Lawley, Mertz, Walsh</u>			
Signature: <u>John Hardin</u>		Date: <u>12 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>TGV</u>	Date: <u>12 Aug 04</u>	Time (local): <u>1231</u>	Project #: <u>G005002</u>
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / Northstar / Liberty / <u>Other</u>		
Latitude (WGS84) <u>see data base</u>	Longitude (WGS84) <u>see data base</u>		
Field Observations and Measurements			
Wind Speed (kts): <u>5 to 0.5</u> <u>at</u>	Wind Direction: <u>E</u>	Seas/Ice: <u>calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Fyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>None</u>	<u>04-TGV-09-CYP-7</u>	
Fish Species: <u>4 horn Sculpin</u>	Fish Length (cm): <u>7.2</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female just Mate Female strike/bucks ingut, 2 Anticod. sculpin</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>None</u>	<u>04-TGV-10-CYP-7</u>	
Fish Species: <u>4 horn Sculpin</u>	Fish Length (cm): <u>14.2</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Male - sculpin ingut</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
	<u>None</u>	<u>04-TGV-11-CYP-7</u>	
Fish Species: <u>4 horn Sculpin</u>	Fish Length (cm): <u>12.8</u> <u>at 13.5</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Whole fish in formalin, sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
	<u>None</u>	<u>04-TGV-12-CYP-7</u>	
Fish Species: <u>4 horn Sculpin</u>	Fish Length (cm): <u>13.5</u> <u>12.1</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>whole fish in formalin, sex indeterminate</u>			
Overall Comments:			
Field Personnel: <u>Jim Hall, Lowley, Walsh, Mertz</u>			
Signature: <u>Jim Hall</u>		Date: <u>12 Aug 04</u>	

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>T6U</u>	Date: <u>12 Aug 04</u>	Time (local): <u>1250</u>	Project #: G005002
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / Northstar / Liberty / <u>Other</u>		
Latitude (WGS84) <u>see database</u>		Longitude (WGS84) <u>see database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>E</u>	Seas/Ice: <u>calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Fyke Net</u>	Other Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>—</u>	<u>—</u>	<u>04-T6U-13-CYP-7</u>	
Fish Species: <u>4horn Sculpin</u>	Fish Length (cm): <u>11.8</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>whole fish in formalin - sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>—</u>	<u>—</u>	<u>04-T6U-14-CYP-7</u>	
Fish Species: <u>4horn Sculpin</u>	Fish Length (cm): <u>12.1</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>whole fish in formalin - sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>—</u>	<u>—</u>	<u>04-T6U-15-CYP-7</u>	
Fish Species: <u>4horn Sculpin</u>	Fish Length (cm): <u>11.6</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>whole fish in formalin - sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>—</u>	<u>—</u>	<u>04-T6U-16-CYP-7</u>	
Fish Species: <u>4horn Sculpin</u>	Fish Length (cm): <u>10.6</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>whole fish in formalin - sex indeterminate</u>			
Overall Comments:			
Field Personnel: <u>Hardin, Lowrey, Walsh, Mertz</u>			
Signature: <u>[Signature]</u>		Date: <u>12 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>76V</u>	Date: <u>12 Aug 04</u>	Time (local): <u>1253</u>	Project #: G005002
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / Northstar / Liberty / <u>Other</u>		
Latitude (WGS84) <u>see database</u>		Longitude (WGS84) <u>see database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>E</u>	Seas/Ice: <u>calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Fyke Net</u>		Other Trawl	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
—	—	<u>04-76V-17-CYP-7</u>	
Fish Species: <u>4horn Sculpin</u>	Fish Length (cm): <u>11.1</u>	Number of fish in sample: <u>(</u>	
Fish Comments: <u>whole fish in formalin</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
—	—	<u>04-76V-18-CYP-7</u>	
Fish Species: <u>4horn Sculpin</u>	Fish Length (cm): <u>18 10.0 pH</u>	Number of fish in sample: <u>(</u>	
Fish Comments: <u>whole fish in formalin</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
—	—	<u>04-76V-19-CYP-7</u>	
Fish Species: <u>4horn Sculpin</u>	Fish Length (cm): <u>18 pH 6.3</u>	Number of fish in sample: <u>(</u>	
Fish Comments: <u>whole fish in formalin</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
—	—	<u>04-76V-20-CYP-7</u>	
Fish Species: <u>4horn Sculpin</u>	Fish Length (cm): <u>7.9</u>	Number of fish in sample: <u>(</u>	
Fish Comments: <u>whole fish in formalin</u>			
Overall Comments:			
Field Personnel: <u>Hardin, Cowley, Mertz, Walsh</u>			
Signature: <u>[Signature]</u>		Date: <u>12 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>TGV</u>	Date: <u>12 Aug 04</u>	Time (local): <u>1840</u>	Project #: G005002
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / Northstar / Liberty / <u>Other</u>		
Latitude (WGS84) <u>see database</u>		Longitude (WGS84) <u>see database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>E</u>	Seas/Ice: <u>calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Fyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>✓ (min)</u>	<u>04-TGV-21-CYP-7</u>	
Fish Species: <u>Arctic Char</u>	Fish Length (cm): <u>25.1</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>sex indeterminate</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>✓</u>	<u>04-TGV-22-CYP-7</u>	
Fish Species: <u>Least Cisco</u>	Fish Length (cm): <u>27.8</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Immature female - Bile lost</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>✓</u>	<u>04-TGV-23-CYP-7</u>	
Fish Species: <u>Least Cisco</u>	Fish Length (cm): <u>26.4</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>✓</u>	<u>04-TGV-24-CYP-7</u>	
Fish Species: <u>Least Cisco</u>	Fish Length (cm): <u>27.4</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female - white eggs</u>			
Overall Comments:			
Field Personnel: <u>Hardin, Lawley, Mertz, Walsh</u>			
Signature: <u>Al Hyl</u>		Date: <u>12 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>TGV</u>	Date: <u>12 Aug 04</u>	Time (local): <u>1836</u>	Project #: G005002
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / Northstar / Liberty <u>Other</u>		
Latitude (WGS84) <u>see database</u>		Longitude (WGS84) <u>see database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>E</u>	Seas/Ice: <u>calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Fyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>Bile lost</u>	<u>04-TGV-25-CYP-7</u>	
Fish Species: <u>Least Cisco</u>	Fish Length (cm): <u>27.3</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Thin fish, Male</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>Bile lost</u>	<u>04-TGV-26-CYP-7</u>	
Fish Species: <u>Least Cisco</u>	Fish Length (cm): <u>27.5</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Male</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>✓</u>	<u>04-TGV-27-CYP-7</u>	
Fish Species: <u>4 Horn Sculpin</u>	Fish Length (cm): <u>17.0</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>NO BILE</u>	<u>04-TGV-28-CYP-7</u>	
Fish Species: <u>4 Horn Sculpin</u>	Fish Length (cm): <u>14.5</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Male</u>			
Overall Comments:			
Field Personnel: <u>Hardin, Lawley, Mertz, Walsh</u>			
Signature: <u>[Signature]</u>		Date: <u>12 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

TGV

Station ID: <u>24 12 Aug 04</u>	Date: <u>12 Aug 04</u>	Time (local): <u>1918</u>	Project #: G005002
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / Northstar / Liberty / <u>Other</u>		
Latitude (WGS84) <u>see database</u>		Longitude (WGS84) <u>see database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>E</u>	Seas/Ice: <u>calm</u>	Water Depth (ft): <u>3</u>
Comments:			
Device: <u>Fyke Net</u>	Otter Trawl	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>✓</u>	<u>04-TGV-29-CYP-1</u>	
Fish Species: <u>4 Horn Sculpin</u>	Fish Length (cm): <u>20.0</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>✓</u>	<u>04-TGV-30-CYP-1</u>	
Fish Species: <u>4 Horn Sculpin</u>	Fish Length (cm): <u>23.3</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>Female</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments:			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments:			
Overall Comments:			
Field Personnel: <u>Hardin, Lawley, Mertz, Walsh</u>			
Signature: <u>[Signature]</u>		Date: <u>12 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>L14</u>	Date: <u>13 Aug 04</u>	Time (local): <u>1559</u>	Project #: G005002
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / Northstar (<u>Liberty</u>) Other		
Latitude (WGS84) <u>See below</u>		Longitude (WGS84) <u>see below</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>5-10</u>	Wind Direction: <u>812</u>	Seas/Ice: <u>1-2ft / no ice</u>	Water Depth (ft): <u>21</u>
Comments:			
Device: <u>Fyke Net</u>	<u>Otter Trawl</u>	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>—</u>	<u>—</u>	<u>04-L14-01-CYP-7</u>	
Fish Species: <u>Arctic Cod</u>	Fish Length (cm): <u>6.8</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>sex indeterminate (1st trawl) 1 squid's in net (~20)</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>—</u>	<u>—</u>	<u>04-L14-02-CYP-7</u>	
Fish Species: <u>Arctic Cod</u>	Fish Length (cm): <u>6.4</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>sex indeterminate (1st trawl)</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>—</u>	<u>—</u>	<u>04-L14-03-CYP-7</u>	
Fish Species: <u>Arctic Cod</u>	Fish Length (cm): <u>6.5, 6.7, 6.9</u>	Number of fish in sample: <u>3</u>	
Fish Comments: <u>No bile, no cyp - sex indeterminate (2nd trawl) Inputs 63</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples) <u>Gills Gut Kidney Liver</u>	Other
<u>—</u>	<u>—</u>	<u>04-L14-04-CYP-7</u>	
Fish Species: <u>Arctic Cod</u>	Fish Length (cm): <u>6.4</u>	Number of fish in sample: <u>1</u>	
Fish Comments: <u>(1725) (4th trawl)</u>			
Overall Comments: <u>5 trawls - (1) 70° 16.8871 → 70° 16.2952 18° M</u>			
<u>1470 34.1682 1470 33.3880 1527-1547</u>			
<u>(2) 70° 16.3871 70° 17.0095 280° M</u>			
<u>1470 34.1682 1470 34.7440 1557-1617</u>			
Field Personnel: <u>Hardin, Mente, Lawley, Walsh</u>			
Signature: <u>[Signature]</u>		Date: <u>13 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>L14</u>	Date: <u>13 Aug 04</u>	Time (local): <u>1746</u>	Project #: G005002
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / Northstar / <u>Liberty</u> / Other		
Latitude (WGS84) <u>Below and (in database)</u>	Longitude (WGS84) <u>Below and (in database)</u>		
Field Observations and Measurements			
Wind Speed (kts): <u>10-15</u>	Wind Direction: <u>NE</u>	Seas/Ice: <u>1-2 ft</u>	Water Depth (ft): <u>21</u>
Comments:			
Device: <u>Fyke Net</u>	<u>Otter Trawl</u>	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>04-L14-05-PHX/Net-T</u>	<u>---</u>	<u>---</u>	
Fish Species: <u>Arctic Cod</u>	Fish Length (cm): <u>64, 64, 70, 82</u>	Number of fish in sample: <u>4</u>	
Fish Comments: <u>(5th Trawl)</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments:			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments:			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments:			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments: <u>Trawl (3) 70° 30.6013 → 70° 16.5175 147° 34.5666 → 147° 33.2412 130° mag; 1630-1760 1624-1644</u>			
Overall Comments: <u>Trawl (4) 70° 16.5702 → 70° 17.1585 147° 34.5387 280° M; 1630-1710, 2.5 ft</u>			
<u>Trawl (5) 70° 17.1700 → 70° 16.5115 147° 34.2284 → 147° 32.6590</u>			
Field Personnel: <u>Hardin, Lawley, Mertz, Walsh</u>			
Signature: <u>[Signature]</u>		Date: <u>13 Aug 04</u>	

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MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>A25</u>	Date: <u>15 Aug 04</u>	Time (local): <u>1127</u>	Project #: <u>G005002</u>
Recorder: <u>Hardin</u>	Sampling Location (circle one): <u>BSMP</u> <u>(Northstar)</u> Liberty / Other		
Latitude (WGS84) <u>(see database)</u>		Longitude (WGS84) <u>(see database)</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>E</u>	Seas/Ice: <u>some flake ice</u>	Water Depth (ft): <u>35-37'</u>
Comments:			
Device: <u>Fyke Net</u>	<u>Otter Trawl</u>	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>✓</u>	<u>—</u>	<u>—</u>	<u>1st Trawl</u>
Fish Species: <u>Arctic Cod</u>	Fish Length (cm): <u>5.0, 7.4, 6.8</u>	Number of fish in sample: <u>4</u>	
Fish Comments: <u>3 Arctic Cod, (1) 4th m sculpin - 4.5cm (150gds in net)</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>—</u>	<u>—</u>	<u>04-N25-02-CYP-7</u>	<u>2nd trawl</u>
Fish Species: <u>Arctic Cod</u>	Fish Length (cm): <u>4.0, 2.5</u>	Number of fish in sample: <u>2</u>	
Fish Comments: <u>150gds in net (1145 = time)</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>04-N25-03-PHC/met-7</u>	<u>—</u>	<u>04-N25-03-CYP-7</u>	<u>3rd Trawl</u>
Fish Species: <u>Arctic Cod</u>	Fish Length (cm): <u>9.7, 4.2, 4.6, 2.4, 3.4</u>	Number of fish in sample: <u>5</u>	
Fish Comments: <u>2 juveniles discarded, damaged. 150gds in net. (Time = 1305)</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>—</u>	<u>—</u>	<u>04-N25-04-CYP-7</u>	<u>4th trawl - 1332</u>
Fish Species: <u>Arctic Cod</u>	Fish Length (cm): <u>4.0, 2.5, 2.5, 2.0</u>	Number of fish in sample: <u>4</u>	
Fish Comments:			
Overall Comments:			
Field Personnel: <u>Hardin, Lawley, Mertz, Walsh</u>			
Signature: <u>[Signature]</u>		Date: <u>15 Aug 04</u>	

Battelle

The Business of Innovation

MMS Continuation of Arctic Nearshore Impact Monitoring in the Development Area (cANIMIDA)

Summer 2004 Fish Sample Log

Station ID: <u>N25</u>	Date: <u>15 Aug 04</u>	Time (local): <u>1332</u>	Project #: <u>G005002</u>
Recorder: <u>Hardin</u>	Sampling Location (circle one): BSMP / Northstar / Liberty / Other		
Latitude (WGS84) <u>see database</u>		Longitude (WGS84) <u>see database</u>	
Field Observations and Measurements			
Wind Speed (kts): <u>0-5</u>	Wind Direction: <u>E</u>	Seas/Ice: <u>21 ft ^{swell} choppy ice</u>	Water Depth (ft): <u>36-37</u>
Comments:			
Device: <u>Fyke Net</u>	<u>Otter Trawl</u>	Other-	No. of Replicates
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
<u>04-N25-05-PHY/MET-7</u>			<u>5th trawl</u>
Fish Species: <u>Arctic Cod</u>	Fish Length (cm): <u>7 @ 2-2.5 cm</u>	Number of fish in sample: <u>5th + 7</u>	
Fish Comments: <u>time = 1332</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments: <u>5th trawl - 0 fish</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments: <u>6th trawl - 0 fish</u>			
Organics/Metals	Bile (FACS)	CYP1A (circle samples)	Gills Gut Kidney Liver Other
Fish Species:	Fish Length (cm):	Number of fish in sample:	
Fish Comments:			
Overall Comments:			
Field Personnel: <u>Hardin, Lawley, Mertz, Walsh</u>			
Signature: <u>[Signature]</u>		Date: <u>15 Aug 04</u>	

Attachment 4: 2002 Collection Permit and Fish Transfer Permit



STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
P.O. Box 25526
JUNEAU, ALASKA 99802-5526

Permit No. CF-04-080

Expires 12/31/2004

FISH RESOURCE PERMIT
(For Scientific/Educational Purposes)

This permit authorizes John Hardin (whose signature is required on page 2 for permit validation)
person
of Battelle Memorial Institute at 703 Palomar Airport Rd, Suite 350, Carlsbad, CA 92009
agency or organization address

to conduct the following activities from July 25, 2004 to December 31, 2004 in accordance with AS 16.05.930 and AS 16.05.340(b).

Purpose: To collect target species of shellfish and amphipods for tissue analysis of petroleum hydrocarbons and trace metals in order to evaluate concentration levels of hydrocarbons in the near-shore biota of the Beaufort Sea; to examine the potential bioaccumulation of organic compounds in the water column by deploying caged mussels and SPMDs, and analyzing them for organics, and to collect target species of fish for tissue analysis of petroleum hydrocarbons, trace metals, biomarker CYP1A, and biomarker bile FAC in order to evaluate contaminant exposure of fish in the near-shore Beaufort Sea.

Location: Nearshore Beaufort Sea, 12-20 stations from Stockton Island to Jones Island, concentrating around the Northstar Production Island.

Species Collected: **Collect & Sacrifice:** 300 Astarte clams, 600 Cyrtodaria clams, 5000 amphipods, 40 Dolly Varden, 40 Arctic cisco, 40 humpback whitefish, 40 four horn sculpin, 40 Arctic cod, 40 Arctic flounder
Collect, transport, caged release & sacrifice: 300 blue mussels (see Contingencies).

-Continued on Back-

REPORT DUE January 31, 2005. The report shall include species, numbers, dates, and locations of collection and disposition, and if applicable, sex, age, and breeding condition, and lengths and weights of fish. The report shall also include other information as may be required under the contingencies section.

GENERAL CONDITIONS, EXCEPTIONS AND RESTRICTIONS

1. This permit must be carried by person(s) specified during approved activities who shall show it on request to persons authorized to enforce Alaska's fish and game laws. This permit is nontransferable and will be revoked or renewal denied by the Commissioner of Fish and Game if the permittee violates any of its conditions, exceptions or restrictions. No redelegation of authority may be allowed under this permit unless specifically noted.
2. No specimens taken under authority hereof may be sold or bartered. All specimens must be deposited in a public museum or a public scientific or educational institution unless otherwise stated herein. Subpermittees shall not retain possession of live animals or other specimens.
3. The permittee shall keep records of all activities conducted under authority of this permit, available for inspection at all reasonable hours upon request of any authorized state enforcement officer.
4. Permits will not be renewed until detailed reports, as specified above, have been received by the department.
5. UNLESS SPECIFICALLY STATED HEREIN, THIS PERMIT DOES NOT AUTHORIZE the exportation of specimens or the taking of specimens in areas otherwise closed to hunting and fishing; without appropriate licenses required by state regulations; during closed seasons; or in any manner, by any means, at any time not permitted by those regulations.


Division of Commercial Fisheries


Deputy Director
Division of Commercial Fisheries

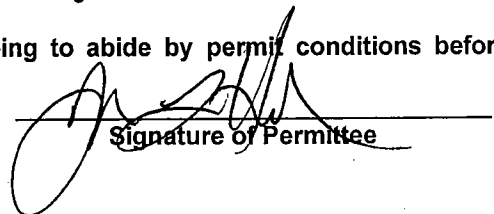
CF-04-080 continued (page 2 of 2)

Authorized Personnel: The following personnel may participate in collecting activities under terms of this permit:

John Hardin; Chris Gagon; Dick Prentki; John Brown; John Trefry; Mark Savioe; Alex Mansfield; Bob Trocine; Gary Lawley; Matt Fitzpatrick; Rob Rember; Other KLI field personnel (TBA).

Contingencies:

- 1) **Fred Bue** (Division of Commercial Fisheries, Fairbanks, 907-459-7217) must be contacted **prior** to you engaging in collecting activities. Division of Commercial Fish Area Management Biologists have the right to specify methods for collecting, as well as limiting the collections of any species, and the number of specimens collected by time and area.
- 2) All unattended collecting gear must be labeled with the permittee's name, telephone number, and permit number.
- 3) Invertebrates, especially sessile invertebrates, should be collected over a broad geographical area to avoid local depletion and disruption of local ecosystems.
- 4) Permits will indicate the number of specimens that may be taken, by species and life stage. Sampling or collecting activities must stop when the maximum allowable number of specimens is obtained. All live fish, shellfish, and aquatic plants collected in excess of the number specified on the permit must be released immediately and unharmed at the capture location, unless otherwise specified in the permit.
- 5) All bycatch incidentally captured during sampling will be identified, recorded and released unharmed if possible. Bycatch data should be included in the collection report.
- 6) This permit will fulfill the requirements of 5AAC 41.005 – 41.060 pertaining to fish transport permits (FTP's), with the condition that the transported species **BE DESTROYED AND NOT BE RELEASED**.
- 7) *A copy of this permit, including any amendments, must be made available at all field collection sites and project sites for inspection upon request by a representative of the department or a law enforcement officer.*
- 8) Issuance of this permit does not absolve the permittee from compliance in full with any and all other applicable federal, state, or local laws regulations, or ordinances.
- 9) **A report of activities, referenced to this fish resource permit number, must be submitted to the Alaska Department of Fish and Game, Division of Commercial Fish, PO Box 25526, Juneau, AK 99802-5526, attention Sheila Martin(465-6149; sheila_martin@fishgame.state.ak.us), within 30 days after the expiration of this permit.** This report must summarize the number of fish captured by location and by species, and the fate of those fish. A report is required whether or not collecting activities were undertaken. A report must also be sent to the Biologist(s) listed under number 1 in this Contingencies section.
- 10) **PERMIT VALIDATION requires permittee's signature agreeing to abide by permit conditions before beginning collecting activities:**


Signature of Permittee

cc: Bonnie Borba
Fred Bue
Ted Meyers
Fish & Wildlife Enforcement
CF Division Files

