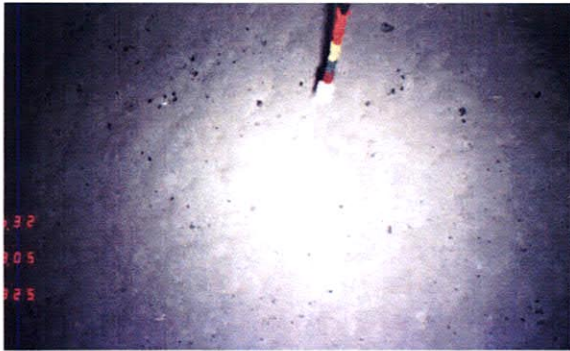
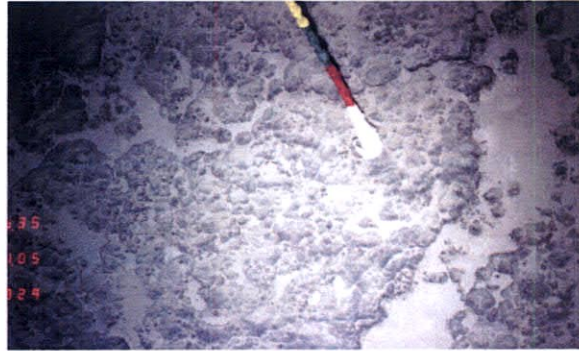


Photo No.005



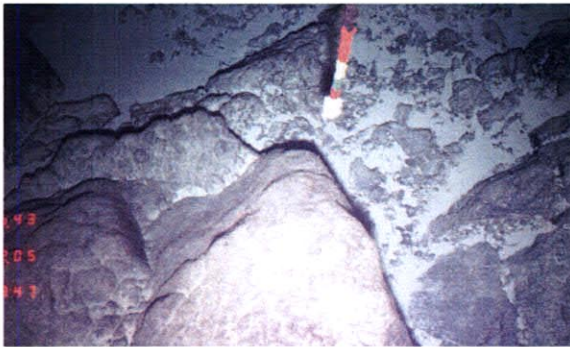
2005/5/5 06:32:33
10° 32.238' N, 144° 48.617' E
Water depth : 3,129 m
Unconsolidated sediments on flat terrace

Photo No.009



2005/5/5 06:35:02
10° 32.252' N, 144° 48.626' E
Water depth : 3,134 m
Bedrock showing flat surface with botryoidal Mn oxide coating

Photo No.027



2005/5/5 06:43:53
10° 32.317' N, 144° 48.668' E
Water depth : 3,179 m
Cliff of massive bedrock consisting of volcanic rocks and terrace at immediate below

Photo No.038



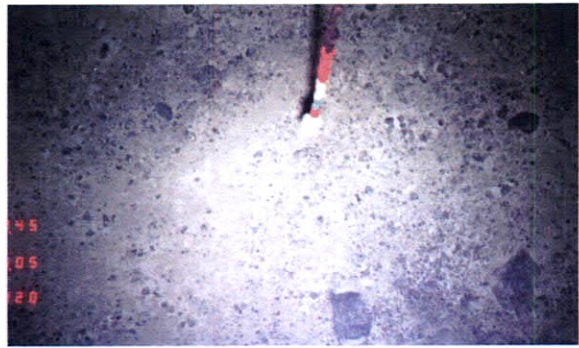
2005/5/5 06:50:12
10° 32.363' N, 144° 48.700' E
Water depth : 3,256 m
Massive bedrock showing steep slope

Photo No.090



2005/5/5 07:36:41
10° 32.829' N, 144° 48.968' E
Water depth : 3,755 m
Bedrock of rough surfaced volcanic breccia or agglomerate

Photo No.100



2005/5/5 07:45:46
10° 32.923' N, 144° 49.032' E
Water depth : 3,860 m
Flat foot of slope covered by unconsolidated sediments

Sampling Point: 05SMC12 AD15



photograph of whole sample

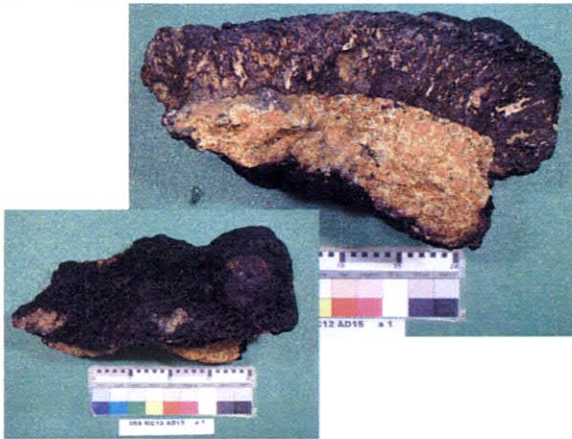
Date: 2005/5/5 - 5/6
Time: 23:09:23 - 00:04:41
Location:
Longitude: 146°01.597'E - 146°01.99'E
Latitude: 09°24.419'N - 09°24.394'N
Water Depth: 2,437m - 2,333m

Sample Weight: 90.3 kg

Contents:

Manganese crust, pyroclastic rock (substrate rock), calcareous conglomerate (fragments) and unconsolidated calcareous sand.

Crust type sample description



Sample No.: a1
Sample Size: 55cm×40cm×28cm

Description:

Manganese crust (7cm thick) and altered volcanic breccia (substrate rock). Crust has two-layered structure.



Sample No.: a2
Sample Size: 25cm×16cm×11cm

Description:

Manganese crust (8cm thick) and volcanic breccia (substrate rock). Crust has two-layered structure.



Sample No.: a3
Sample Size: 33cm×33cm×16cm

Description:

manganese crust (> 14cm thick) which has four-layered structure.

Sampling Point: 05SMC12 AD15

Crust type sample description



Sample No.: a4
Sample Size: 35cm×30cm×16cm

Description:
Manganese crust (> 13cm thick) which has four-layered structure.

Rock type sample description



Sample No.: c1
Sample Size: 10cm×8cm×5cm

Description:
Calcareous conglomerate which contains granule - pebble size basalt fragments. Thin (<1mm) Mn oxide layer covers surface of this sample.

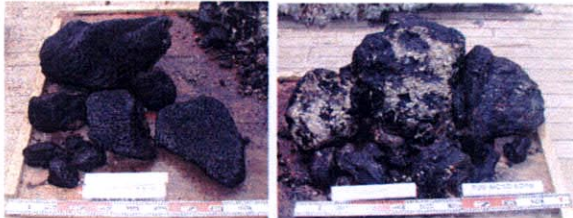
Sampling Point: 05SMC12 AD16



photograph of whole sample

Date: 2005/5/6
Time: 02:08:41 - 02:54:40
Location:
Longitude: 146°01.881'E - 146°02.235'E
Latitude: 09°22.559'N - 09°22.456'N
Water Depth: 2,004m - 1,934m

Sample Weight: 288.6 kg



crust type

rock type

Contents:

Manganese crust, calcareous conglomerate (substrate rock), volcanic breccia, aphyric basalt (fragments) and unconsolidated calcareous sand.

Crust type sample description



Sample No.: a1
Sample Size: 70cm×50cm×40cm
Description:

Manganese crust (8cm thick) and altered calcareous conglomerate (substrate rock). Crust has two-layered structure.



Sample No.: a2
Sample Size: 40cm×30cm×10cm
Description:

Manganese crust (> 11cm thick) which has three-layered structure..



Sample No.: a3
Sample Size: 20cm×25cm×20cm
Description:

Manganese crust (> 11cm thick) which has three-layered structure.

Sampling Point: 05SMC12 AD16

Crust type sample description



Sample No.: a4
Sample Size: 20cm×20cm×20cm

Description:
Manganese crust (> 10cm thick) which has two-layered structure.

Rock type sample description



Sample No.: c1
Sample Size: 12cm×12cm×6.5cm

Description:
Volcanic breccia which contains granule - pebble size fragments altered tuffaceous rock.



Sample No.: c2
Sample Size: 9cm×9cm×10cm

Description:
Aphyric basalt. Thin (<1mm) Mn oxide layer covers surface of this sample.



Sample No.: c3
Sample Size: 14cm×10cm×7cm

Description:
Aphyric basalt. Manganese crust (1.5cm thick) covers surface of this sample.

Sampling Point: 05SMC12 AD17



photograph of whole sample

Date: 2005/5/6
Time: 04:44:27 - 05:29:24
Location:
Longitude: 146°01.662'E - 146°01.887'E
Latitude: 09°21.897'N - 09°21.910'N
Water Depth: 1,772m - 1,603m

Sample Weight: 3.6 kg

Contents:
Manganese crust, volcanic rock, pumice (fragments) and unconsolidated calcareous sand.

Crust type sample description



Sample No.: a1
Sample Size: 15cm×13cm×4cm
Description:
Manganese crust (>4cm thick) which shows porous structure.

Rock type sample description



Description:
Fragments of pebble size volcanic rock (roundness: subangular) and pumice (roundness: rounded).

Sampling Point: 05SMC12 AD18



photograph of whole sample

Date: 2005/5/6
Time: 07:01:03 - 07:33:44
Location:
Longitude: 146°01.643'E - 146°01.984'E
Latitude: 09°21.014'N - 09°21.026'N
Water Depth: 1,368m - 1,451m

Sample Weight: 0.40 kg

Contents:
Fragments of reef limestone.

Rock type sample description



Sample No.: c1
Sample Size: 10cm×8cm×3cm

Description:
Reef limestone which principally includes granule size bioclasts consisting of benthic foraminifera, shell and coral (grainstone or rudstone).

Sampling Point: 05SMC12 AD19



photograph of whole sample

Date: 2005/5/6
Time: 22:33:14 - 23:12:29
Location:
Longitude: 146°01.821'E - 146°02.065'E
Latitude: 09°22.218'N - 09°22.006'N
Water Depth: 1,873m - 1,662m

Sample Weight: 9.45 kg

Contents:
Manganese crust, calcareous conglomerate (fragments) and unconsolidated calcareous sand.

Crust type sample description



Sample No.: a1
Sample Size: 15cm×10cm×7cm
Description:

Fragment of manganese nodule, 4cm thick of Mn oxide. Nuclear of this nodule is calcareous ooze (phosphatization).



Sample No.: a2
Sample Size: 18cm×9cm×7.5cm
Description:

Manganese crust (>7cm thick) which has four-layered structure. This sample is brittle and crushed.



Sample No.: a3
Sample Size: 11cm×9.5cm×5cm
Description:

Manganese crust (3cm thick) and coarse sandstone (substrate rock). Crust shows columnar texture.

Sampling Point: 05SMC12 AD19

Rock type sample description



Sample No.: c1
Sample Size: 18cm×18cm×8cm

Description:
Aphyric basalt. Thin (<1mm) Mn oxide layer covers surface of this sample.



Sample No.: c2
Sample Size: 12cm×9cm×6cm

Description:
Calcareous conglomerate which contains pebble size angular gravels consisting of aphyric basalt.



Sample No.: c3
Sample Size: 20cm×17cm×12cm

Description:
Calcareous conglomerate which contains pebble size angular gravels consisting of aphyric basalt.

Sampling Point: 05SMC12 AD20



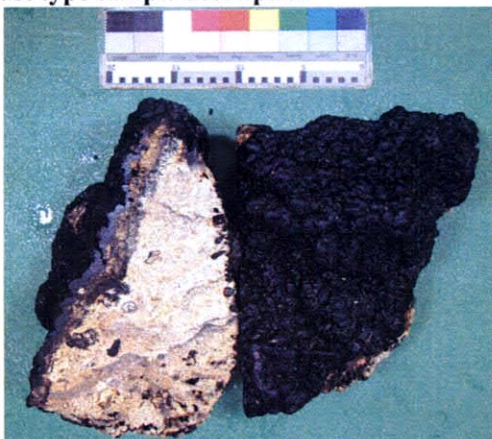
photograph of whole sample

Date: 2005/5/7
Time: 00:49:31 - 01:30:03
Location:
Longitude: 146°01.812'E - 146°01.944'E
Latitude: 09°21.397'N - 09°21.369'N
Water Depth: 1,562m - 1,557m

Sample Weight: 19.1 kg

Contents:
Manganese crust, calcareous conglomerate (substrate rock) and reef limestone (fragments).

Crust type sample description



Sample No.: a1
Sample Size: 52cm×21cm×15cm

Description:
Manganese crust (0.5cm thick) and calcareous conglomerate (substrate rock). Calcareous conglomerate is considered to be redeposit of reef



Sample No.: a2
Sample Size: 18cm×13cm×7cm

Description:
Manganese crust (0.4cm thick) and calcareous conglomerate which includes tuffaceous siltstone (substrate rock).



Sample No.: a3
Sample Size: 9cm×6cm×3cm

Description:
Manganese crust (2cm thick) and brownish tuffaceous siltstone (substrate rock).

Sampling Point: 05SMC12 AD21



photograph of whole sample

Date: 2005/5/7
Time: 02:55:46 - 03:28:59
Location:
Longitude: 146°02.559'E - 146°02.797'E
Latitude: 09°20.618'N - 09°20.628'N
Water Depth: 1,324m - 1,326m

Sample Weight: 7.60 kg

Contents:
Fragments of reef limestone and redeposited limestone.

Rock type sample description



Sample No.: c1
Sample Size: 25cm×18cm×12cm

Description:
Reef limestone which includes bioclasts mainly consisting of benthic foraminifera (grainstone - rudstone). Manganese crust (0.2cm thick) covers surface of this sample.



Sample No.: c2
Sample Size: 11cm×8cm×6cm

Description:
Sandy limestone (grainstone) which is redeposit of reef limestone.

Sampling Point: 05SMC12 AD22



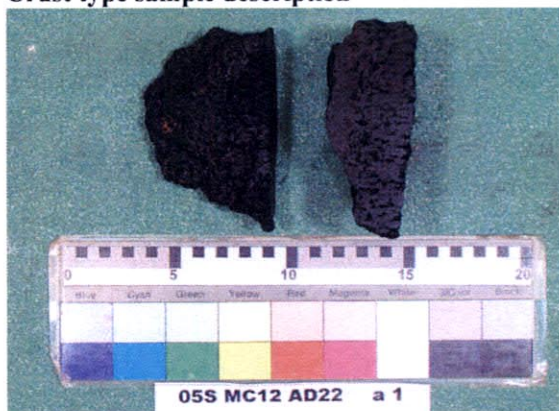
photograph of whole sample

Date: 2005/5/7
Time: 05:18:58 - 05:56:35
Location:
Longitude: 145°59.797'E - 145°59.998'E
Latitude: 09°19.321'N - 09°19.487'N
Water Depth: 1,822m - 1,648m

Sample Weight: 2.80 kg

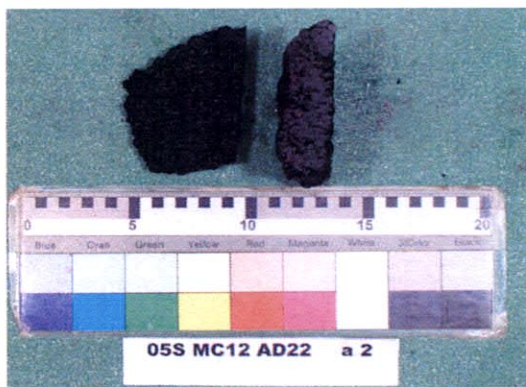
Contents:
Manganese crust and nodule, volcanic breccia, limestone (fragments) and unconsolidated calcareous sand.

Crust type sample description



Sample No.: a1
Sample Size: 12cm×8cm×3cm

Description:
Manganese crust (>3.5cm thick). This sample shows porous structure.



Sample No.: a2
Sample Size: 11cm×6cm×2cm

Description:
Manganese crust (>1.8cm thick). This sample shows vesicular texture.



Sample No.: a3
Sample Size: 7cm×4cm×3.5cm

Description:
Manganese crust (>3cm thick). This sample shows columnar texture.