

Meeting Minutes – 15th EPSP Meeting
IODP Conference Room, Texas A&M University
College Station, TX
May 5-7, 2014

Meeting was called to order by Barry Katz, EPSP Chair at 8:30 in the IODP Conference Room, Texas A&M University, College Station, TX.

Mitch Malone, meeting host, provided a brief overview of meeting logistics.

All attendees conducted self-introductions.

EPSP members in attendance: Dave Campin, Brandon Dugan, Jennifer Jencks, Barry Katz (Chair), Philippe Lapointe, Gilles Lericolais (alternate), Donald Potts, Claudio Rabe, Craig Shipp, Haibin Song, Dieter Strack, Takeshi Tsuji, Bill Winters, and Guangfa Zhong.

Guests in attendance: James Allan, Nathan Bangs, Christian Betzler, Kara Bogus, Dru Clark, George Claypool, Steven Clemens, Neil DeSilva, Craig Fulthorpe, Stephen Gallagher, Stuart Henrys, Adam Klaus, Denise Kulhanek, Leah LeVay, David Mallinson, Mitch Malone, Tim McHargue, Stephen Midgley, Greg Mountain, Dhahawjai Pandey, Katerina Petrontis, Michael Riedel, Yair Rosenthal, Yoshinori Sanada, Volkhard Spiess, Michael Storms, Graham Tulloch, Mike Underwood, Laura Wallace, Trevor Williams, Carlos Alvarez Zarikian

Barry Katz reviewed changes to the panel as the new program “International Ocean Discovery Program” has been initiated.

Minutes were accepted from the 14th panel meeting without any further modifications or revisions.

The agenda was reviewed and modified in order to account for a more logical flow.

Brandan Dugan notified the panel of a conflict of interest with Proposal 837. He is a co-proponent. As a conflicted panel member he could contribute to the discussion but would abstain from voting on site recommendations.

Review Proposal 837 – Sumatra Subduction Zone – Nathan Bangs presented the scientific justification for the proposal and the site-by-site review for approval recommendations. Drilling will take place in the vicinity of the 2004 North Sumatra earthquake, outboard of the subduction zone proper. The overall objectives of the drilling program are to establish the initial and evolving properties of the incoming sedimentary section and their potential effects on seismogenesis, tsunamigenesis, and forearc development. In addition, the proposed drill sites will provide guidance on the state of stress within the oceanic plate and will provide information on the Bengal-Nicobar fan system.

Site	Latitude	Longitude	Depth (mbsf)	Remarks
SUMA-08A				Not recommended for

				approval as originally proposed
SUMA-08B	3.36915112476°	91.9445466187°	1760	Site relocated to CMP29950 on BGR06-102
SUMA-10A	3.522780°	92.945966°	1400	Recommended for approval as requested
SUMA-11A				Not recommended for approval as originally proposed
SUMA-11B	3.09553774394°	91.6679293852°	To basement	Site relocated to CDP 36850 on BGR06-102
SUMA-12A	2.754761°	91.759619°	1610	Recommended for approval as requested
SUMA-13A				Not recommended for approval as originally proposed
SUMA-13B	3.71796885462°	93.2479595209°	2000	Site relocated to CDP 11600 on BGR06-105

Review Proposal 781 – Hikurangi Subduction Zone – Laura Wallace, Mike Underwood, and Stuart Henrys re-presented the scientific background (this proposal had been previously presented to the panel) and site-by-site review. The program was designed to examine slow slip events (SSE) in an area where these aseismic events occur almost annually. This first phase of drilling will characterize the state and composition of the incoming plate and the nature of the shallow boundary near the trench, characterize material properties, thermal regime and stress condition in the upper plate in an SSE zone and will install borehole observatories.

Site	Latitude	Longitude	Depth (mbsf)	Remarks
HSM-11A	-39° 1' 48.07"	179° 16' 07.87"	400	Recommended for approval as proposed; Originally proposed as Alt1-08A
HSM-12A	-39° 1' 40.38"	179° 14' 37.48"	400	Recommended for approval as proposed; Originally proposed as Alt2-08A
HSM-13A				Not recommended for approval as originally proposed; Originally proposed as Alt1-05A
HSM-13B	-39° 2' 19.7"	179° 7' 41.01"	1500	Site located at CDP 9100 on TAN12-13-2A
HSM-14A	-38° 58' 29.71"	179° 07' 17.55"	1300	Recommended for approval as originally

				proposed; Originally proposed as Alt2-05A
HSM-04A	-38° 51.299'	178° 53.187'		Tabled-No action taken
HSM-15A	-38° 51' 32.20"	178° 53' 45.62"	600	Recommended for approval as proposed; Originally proposed as 1Alt-04A
HSM-16A				Not recommended for approval as originally proposed; Originally proposed as Alt2-04A
HSM-16B	-38° 54' 48.26"	178° 54' 24.63"	1350	Site located at CDP2550 TAN1114-05; Originally proposed as 2Alt-04A
HSM-17A	-38° 51' 26.56"	178° 53' 02.98"	1100	Multi-beam image of the surface required prior to drilling; Originally proposed as Alt3-04
HSM-18A	-38° 52' 18.87"	178° 56' 23.74"	800	Approved as proposed; Originally proposed as Alt1-10A
HSM-19A				Not recommended for approval as originally proposed; Originally proposed as Alt2-10A
HSM-19B	-38° 50' 09.96"	178° 56' 38.05"	1100	Site located at CDP 9700 on TAN1114-01
HSM-20A	-38° 49' 16.72"	178° 54' 47.22"	1550	Multibeam shade relief and analogues required from prior drilling; Originally proposed as Alt3-10A
HSM-01A	-38° 43.637'	178° 36.854'	1180	Primary concerns associated with pressure have been handled; EPSP recommends that the operator use the previously developed monitoring protocol.
HSM-21A				Not recommended for approval as proposed; Originally proposed as Alt1-01A
HSM-21B	-38° 43' 12.20"	178° 37' 06.84"	1200	Site located at

				CDP1900 on line TAN1114-08
HSM-22A				Not recommended for approval as originally; Originally proposed as Alt2-01A
HSM-22B	-38° 43' 05.62"	178° 38' 33.16"	1200	Site located at CDP7000 on line TAN1213-01
HSM-23A				Not recommended for approval as originally proposed; Originally proposed as Alt3-01A
HSM-23B	-38° 43' 01.38"	178° 38' 58.40"	1300	Site located at CDP7100 on line TAN1213-01

The panel would like to review multi-beam data for HSM-17A and HSM-20A prior to recommending final approval.

Review Proposal 820 – Maldives – Christian Betzler presented the scientific objectives of the program and the site-by-site review. The program’s goals include establishing Neogene environmental change of the Indian Ocean associated with the monsoonal pattern and sea level change and to reconstruct the drowning history of the Maldives carbonate bank.

Site	Latitude	Longitude	Depth (mbsf)	Remarks
MAL-01A	4.933109°	73.01132°	1060	Recommended for approval as requested
MAL-02A	4.93315634°	73.02798344°	560	Recommended for approval as requested
MAL-03A	4.93306351°	73.07130519°	532	Recommended for approval as requested
MAL-04B	4.92944400°	73.28677600°	590	Recommended for approval as requested
MAL-05A	4.76638800°	72.98388900°	420	Recommended for approval as requested
MAL-06B	4.77109600°	73.06684800°	604	Recommended for approval as requested
MAL-07A	4.766388°	73.135556°	710	Recommended for approval as requested

Review of SCIMPI (X 341) Part 1 – The operational summary was presented by Mitch Malone. Hole U1416B was dedicated to collection wireline logging data at the SCIMPI site. It was located 40 meters

from Hole U1416A. The hole was drilled to 290 meters, the bit was dropped, followed by pulling of the pipe. With the pipe at 113 mbsf backflow increased requiring follow-up action. The hole was circulated with seawater and the displaced with 70 bbl of 10.5 ppg mud. Flow was greatly diminished for two hours then increased again. Operational lessons learned the APC/XCB BHA with LFV should be the standard for gas hydrate systems. Such an approach would eliminate the loss of the RCB flapper valve associated with the dropping of the RCB BHA in order to maximize operational inside diameter.

Meeting recessed at 17:00

Day 2 called to order at 08:25

Review of SCIMPI (X 341) Part 2 – Michael Riedel and Volkhard Spiess presented part 2 of the SCIMPI review. No clear evidence of free gas was present. The available data also indicated only limited presence of gas hydrate. Gas flow was not likely a result of gas exsolution because of the pressure regime. The hole possibly penetrated an aquifer (a sandy layer resulting from a turbidite or contourite). Natural hydraulic fracturing may have also found a fluid conduit. Other possible mechanisms may be margin dewatering or migration along thrust faults and permeable accreted sediments. It was not likely that panel could have been identified the risk from the available seismic data prior to drilling.

Review Proposal 795 – Indian Monsoons- The scientific objectives and site-by-site review was presented by Steve Clemens and Michael Riedel. Drilling seeks to recover sediments ranging in age from Late Cretaceous through the Holocene to: 1) establish the driving mechanism for monsoonal circulation; 2) determine whether winds and precipitation are coupled; 3) constrain the effects of climate change and tectonics on erosion and runoff; 4) provide calibration to climates models; and 5) establish, if one exists, the relationship between monsoons and major global climate change events.

Site	Latitude	Longitude	Depth (mbsf)	Remarks
BB-7	19.08350°	85.73487°	184	Recommended for approval as requested
BB-5	17.74536°	84.787752°	680	Recommended for approval as requested
BB-2B	18.99692°	85.62157°	170	Final depth of penetration is based on recommendations from the TAMU Safety Panel after being provided with an uncertainty analysis
BB-1	18.935106°	85.699705	222	Not recommended for approval as originally proposed
BB-1B	18.935106°	85.699705°		2.5 sec TWT SP87 on line L2200-2700-Tr3554-T0-2900
BB-8				Not recommended for

				approval as originally proposed
BB-8B	18.921988°	85.764460°	200	Located at CDP 3970 on Line 2148.
BB-4	19.02447°	85.71464°	172	Recommended for approval as requested
BB-6	18.03691°	85.16231°	624	Recommended for approval as requested
AA-4				Not recommended for approval as originally proposed
AA-4B	10.633845°	93.000061°	422	Located at SP2791 on Line AN99-17A
AA-2B	10.790098°	93.00000°	738	Approved to 2.665 sec TWT
AA-5	17.724476°	93.088833°	603	Recommended for approval as requested
AA-1	10.82227°	93.11223°	544	Recommended for approval as requested
AA-3	10.39061405°	93.27816834°	471	Approved to 3.95 sec TWT
N90E1				Site was re-examined following the initial panel discussion
N90E-2A				Site was re-examined following the initial panel discussion

Review Proposal 793 – Arabian Sea Monsoon – Dhananjai Pandey presented the scientific program and site-by-site review. His is one of the programs aimed at examining the relationship between tectonics and climate. The study will examine the relative roles of climate and tectonics on weathering and erosion of the Himalayas and Tibet. Unlike the onshore record the offshore stratigraphic record should be largely complete. Specifically does the Himalayan exhumation correlates with monsoonal intensity.

Site	Latitude	Longitude	Depth (mbsf)	Remarks
IND-01A	17.793544°	67.9958°	750	Recommended for approval as requested
IND-02B	17.89776°	68.71888°	580	Recommended for approval
IND-03B				Not recommended for approval as originally proposed
IND-03C	16.62143°	68.83896°	Basement + 200	Located at SP11741 on line W06; Continuous coring and standard

				hydrocarbon monitoring
IND-04A	16.614744°	69.358589°	Basement + 200	Recommend approval as proposed.

Review Proposal 807 – Indonesian Throughflow - Stephen Gallagher and Craig Fulthorpe presented the scientific objectives and site-by-site review. The proposal is aimed at answering a suite of questions dealing with the role of heat transport and climate change. Specifically the proposal will be examining the timing and variability of the Indonesian Throughflow and Indo-Pacific Warm Pool; recovering material that will aid in examining the variability of the Australian monsoon and the onset of Australian aridity; and provide information on the spatial variability of subsidence along the Australian margin.

Site	Latitude	Longitude	Depth (mbsf)	Remarks
NWS-1A	-18.3233°	118.7337°	475	Recommended for approval as requested
NWS-7A	-18.0652°	118.6313°	840	Recommended for approval as proposed; Originally designated NWS-1B
NWS-2A	-18.9653°	117.6237°	530	Recommended for approval as requested
NWS-8A	-18.9122°	117.5838°	530	Recommended for approval as proposed; Originally designated NWS-2B

Meeting recessed at 17:00

Day three of the meeting called to order at 08:20.

Site	Latitude	Longitude	Depth (mbsf)	Remarks
NWS-3A	-19.8223°	115.7103°	855	Recommended for approval as requested
NWS-9A	-19.7978°	115.7434°	780	Recommended for approval are requested; Originally designated NWS-3B
NWS-4A	-20.21438°	115.06679°	1155	Recommended for approval as requested
NWS-10A	-20.5555°	114.8777°	680	Recommended for approval as requested subject to the receipt of a better seismic data by the panel; Originally designated NWS-4B

NWS-11A	-20.4736°	114.8726°	1055	Recommended for approval as requested subject to the receipt of a better seismic data by the panel; Originally designated NWS-4C
NWS-5A	-27.3749°	112.9250°	366	Recommended for approval as requested
NWS-12A	-27.2802°	112.8881°	366	Recommended for approval as requested; Originally designated NWS-5B
NWS-6A	-28.6641°	113.5778°	330	Recommended for approval as requested
NWS-13A	-28.6710°	113.5605°	330	Recommended for approval as requested; Originally designated NWS-6B

Review Proposal 813 – Antarctic Paleoclimate – The scientific objective and site-by-site review was presented by Trevor Williams. The primary objectives include: 1) gaining an understanding of the timing and conditions leading to the ice advances and determining whether there are any leading indicators for glaciation; 2) gaining a better understanding of climatic fluctuations during the Oligocene; and 3) determining the stability of Early Cretaceous greenhouse conditions. Other drilling objectives include: 1) establishing the timing of rifting; 2) dating of major unconformities; and 3) establishing glacial isostatic adjustment. Drilling of this site will be performed using a seafloor drilling rig. Because of potential ice conditions the site-by-site review did not result in the approval of a specific drilling locations but rather approved intervals on the seismic data presented that would be acceptable to the panel and as under similar circumstances the recommendation for approval extends to a ribbon 100 meters wide with the seismic track being the centerline.

Site	Seismic Line	Shot Points	Depth (mbsf)	Remarks
GVAL-1A	WEGA02-01	970-2624	100	Recommended for approval with seismic range ±50 meters from seismic line position to revised depth
GVAL-2A			100	
GVAL-3A			100	
GVAL-4A			100	
GVAL-5A			100	
GVAL-6A			100	
GVAL-7A			100	
GVAL-8A			100	
GVAL-9A			100	
GVAL-10A			100	
GVAL-33A	WEGA01-02B	4700-4756	100	Recommended for approval with seismic
GVAL-34A			100	

				range ±50 meters from seismic line position to revised depth
GVAL-31A GVAL-32A	WEGA01-2B	2420-2460	100 100	Recommended for approval with seismic range ±50 meters from seismic line position to revised depth
GVAL-35A GVAL-36A GVAL-37A	WEGA01-03	300-450	100 100 100	Recommended for approval with seismic range ±50 meters from seismic line position to revised depth
GVAL-41A GVAL-42A	WEGA03-01B	1075-1150	100 100	Recommended for approval with seismic range ±50 meters from seismic line position to revised depth
GVAL-43A GVAL-44A GVAL-45A GVAL-46A GVAL-47A	WEGA03-02	1750-2250	100 100 100 100 100	Recommended for approval with seismic range ±50 meters from seismic line position to revised depth
GVAL-30A				Not recommended for approval; No data available
GVAL-38A GVAL-39A GVAL-40A	WEGA03-01	15-60	100 100 100	Recommended for approval with seismic range ±50 meters from seismic line position to requested depth
GVAL-22A GVAL-23A GVAL-24A GVAL-25A GVAL-26A GVAL-27A GVAL-28A GVAL-29A	IFP-103	75-1100	100 100 100 100 100 100 100 100	Recommended for approval with seismic range ±50 meters from seismic line position to revised depth
GVAL-11A GVAL-12A GVAL-13A GVAL-14A GVAL-15A GVAL-16A GVAL-17A GVAL-18A	IFP-107	50-1350	100 100 100 100 100 100 100 100	Recommended for approval with seismic range ±50 meters from seismic line position to revised depth

GVAL-19A	100
GVAL-20A	100
GVAL-21A	100

Review Proposal 799 – Warm Pool – The scientific objectives and site-by-site review was presented by Yair Rosenthal and Greg Mountain. The specific objectives are: 1) establishing the spatial and temporal extent of millennial variability in the Western Pacific Warm Pool (WPWP) the warmest surface waters; 2) 2) establishing the long-term evolution of the WPWP; 3) establishing whether hydrologic changes in the western parts of the WPWP respond strictly to changes in East Asian monsoons or are they independently teleconnected to the North Atlantic region; 4) determining the changes in the Indonesian Throughflow; and 5) establishing chemical changes in seawater since the mid-Miocene.

Site	Latitude	Longitude	Depth (mbsf)	Remarks
WP-12A	-15.101667	120.458333	800	Recommended for approval as requested
WP-11B	-13.0873	121.80405	700	Recommended for approval as requested
WP-71A	-3.132036	124.782833	225	Recommended for approval as requested
WP-72A	-3.102647	142.792910	325	Recommended for approval as requested
WP-06A	-2.312943	144.841230	215	Recommended for approval as requested
WP-14A	-2.333300°	144° 49.16334'	177	Located at SP2100 on line WP6Line5; 1.425 sec TWT
WP-09A	6.34690	125.84817	500	Recommended for approval as requested
WP-13A	16.066292	124.700490	280	Recommended for approval as requested
WP-02A	5.815825	142.654322	430	Recommended for approval as requested
WP-21A	5.826461667	142.6222333	150	Recommended for approval as requested
WP-03A	2.043175	141.7547783	500	Recommended for approval as requested
WP-04A	2.119981	141.027733	200	Recommended for approval as requested
WP-05A	-2.37229	144.60115	225	Recommended for approval as requested

Re-examination of Site N90E-1 – Panel re-examined the proposed site. (Details are not provided because decisions on this site have been superseded following the meeting. E-mail trail will be included in the meeting CD).

Site	Latitude	Longitude	Depth (mbsf)	Remarks
N90E-2C	5.383401°	90.36832°	350	Recommended for approval as requested

Review Proposal 696 – Bonin Forearc – Mitch Malone represented the scientific party. This will be the third expedition to the region. Drilling the volcanic rocks of the forearc has a number of related scientific objectives: 1) obtain a high-fidelity record of magmatic evolution; 2) test the hypothesis that “Fore-arc Basalts” (FAB) tholeiites lie beneath boninites ; 3) understand chemical gradients within these units and across their transitions and to understand their tectonic significance; 4) understand how mantle melting processes evolve; and 5) test the hypothesis that forearc lithosphere created during subduction initiation is the birthplace of supra-subduction zone ophiolites.

Site	Latitude	Longitude	Depth (mbsf)	Remarks
BON-01A	28.450088°	142.755759°	1510	Recommended for approval as requested
BON-02A	28.407491°	142.608537°	1370	Recommended for approval as requested
BON-03A	28.433871°	142.766970°	1460	Recommended for approval as requested
BON-04A	28.424348°	142.601979°	1350	Recommended for approval as requested
BON-05A	28.408965°	142.617253°	1410	Recommended for approval as requested
BON-06B	28.427221°	142.725017°	1520	Recommended for approval as requested
MAR-1	17°51.75′	147°18.09′	1500	Recommended for approval as requested; Redrill of 459

Review Proposal 758 (Atlantis Massif) – Barry Katz noted that as a consequence of its nature this proposal would have been handled as an e-review but the material was delivered along with the meeting pre-read. This is an MSP that will utilize a seabed rock drilling system. Because of the limited sedimentary thickness and proposed penetration the panel approved drilling within a geographic box. This provides the necessary flexibility to the operator with requiring shore-based review of drilling plan changes. Based on the proposed site locations the box defined:

- South – 30°12′N
- North – 30°7′N
- East – 42° 3.5′W
- West – 42°11.5′W

If the proponents located their sites as stated in the proposal the proposed names are accepted. If the proponents take advantage of the flexibility provided by the panel the details on the new sites locations should be provided to Barry Katz for the panel's records.

JOIDES Resolution Update – Mitch Malone presented a brief summary of “JR” activities since the last EPSP meeting. Expedition 341 (Gulf of Alaska) was completed. 3240 meters of middle Miocene-Pleistocene/Holocene sediment was recovered. There was excellent recovery at the Surveyor Fan sites. Recovery at Sites 1420 and 1421 was modest (14-23%) but recovered intervals were critical to addressing expedition objectives. Shipboard data provided a temporal framework to regionally map individual advance-retreat cycles of grounded ice and ice facies. Expedition 346 (Asian Monsoon) was completed. High resolution paleoclimate records were recovered at multiple locations. The reconstruction of the Yangtze River discharge history was limited by the presence of thick sand layers. Cyclic patterns were identified that could be correlated across the basin. Following Expedition the “JR” went into dry dock in Subic Bay for maintenance and repair. Following dry dock Expedition 349 (South China Sea) was completed. Among the highlights of Exp 349 was the recovery of oceanic basement and overlying basal sediments which dated the cessation of spreading in the early Miocene and the coring of an unconformity on basement high in the northwestern sub-basin, which suggested that continental break-occurred at the time of the unconformity. At the time of the meeting Expedition 350 (Izu-Bonin-Mariana Rear Arc) was underway.

Update from NSF – Jamie Allan provided a brief up on changes as the new IODP – International Ocean Discovery Program – has been initiated.

Overview of Databank – Dru Clark presented an overview of the databank. Following discussion by the panel, it was determined that at the next meeting there will be an attempt to interactively utilize the Databank as part of the review process. This will not, however, reduce the nature of the data that needs to be included in the Safety Package panel pre-read.

Next EPSP meeting is tentatively scheduled to be held during the first half of September 2015 in College Station, TX.