The persistence of rapid exhumation in the eastern Himalayan syntaxis

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Abstract

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At the eastern margin of the Indian-Eurasian plate collision, margin-normal plate convergence transitions to dextral strike-slip motion, warping tectonic units southward to form the eastern Himalayan syntaxis. Large southeast Asian rivers (e.g., the Yangtze, Salween and Mekong rivers) closely following the periphery of this syntaxis reflect the accumulation of crustal strain from the ongoing collision. In contrast, the Yarlung-Siang-Brahmaputra River bisects the syntaxis, abruptly dropping over two kilometers from the Tibetan Plateau through the steep Tsangpo Gorge. Along this reach, surface erosion rates increase sharply, contributing nearly half of the erosional efflux to the foreland from only ~3% of the river's drainage area. Curiously, this intense erosion directly coincides with the Namche Barwa metamorphic massif, a crustal-scale antiform that has been rapidly exhumed in the Late Pliocene and Pleistocene.

Thermo-mechanical modeling indicates that if erosion has remained focused in this area over a multi-million year timescale, the continuous removal of upper crustal material

may have resulted in the local exhumation of a crustal-scale structure. This consequential rock uplift would have maintained a steep topographic gradient at the southeastern margin of the Tibetan Plateau, such that the high relief and elevated erosional fluxes observed today may in fact have persisted for many millions of years in the eastern Himalayan landscape. This idea presents an intreseting concept in landscape evolution – that the legacy of processes shaping the surface of the Earth may extend much deeper to direcly influence the dynamics of the Earth's crust.

This thesis specifically evaluates the circumstances by which rapid exhumation of the eastern syntaxis initiated and has been sustained in the Late Cenozoic. To do this, I extend the existing Late Pliocene and Pleistocene exhumation history by interpreting detrital evidence from syntaxis-proximal foreland basin deposits. First, I reconstruct continental-scale river drainage patterns from detrital analyses of foreland basin units, demonstrating a connection of the Yarlung-Siang-Brahmaputra River prior to the Middle or Early Miocene. Second, I document the potential of glacial ice and debris dam-burst flood events to exacerbate Quaternary erosion rates within this connected river system. Finally, I interpret the cooling histories of detrital minerals in the same foreland basin units to constraining the onset of rapid exhumation rates in the Late Miocene.

I conclude from this work that an antecedent river has locally sustained rapid exhumation of the eastern syntaxis since the Late Miocene. In the Late Miocene, localized tectonic uplift accelerated exhumation where an antecedent river crossed the southeastern Tibetan Plateau margin. By the Early Pliocene, thermo-mechanical feedbacks between surface erosion and rock uplift may have developed to sustain rapid exhumation rates at the plateau margin to the present day.

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for science

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CHAPTER 1: Introduction

1.0 Abstract

At the eastern margin of the Indian-Eurasian plate collision, margin-normal plate convergence transitions to dextral strike-slip motion, warping tectonic units southward to form the eastern Himalayan syntaxis. Large southeast Asian rivers (e.g., the Yangtze, Salween and Mekong rivers) closely following the periphery of this syntaxis reflect the accumulation of crustal strain from the ongoing collision. In contrast, the Yarlung-Siang-Brahmaputra River bisects the syntaxis, abruptly dropping over two kilometers from the Tibetan Plateau through the steep Tsangpo Gorge. Along this reach, surface erosion rates increase sharply, contributing nearly half of the erosional efflux to the foreland from only ~3% of the river's drainage area. Curiously, this intense erosion directly coincides with the Namche Barwa metamorphic massif, a crustal-scale antiform that has been rapidly exhumed in the Late Pliocene and Pleistocene.

Thermo-mechanical modeling indicates that if erosion has remained focused in this area over a multi-million year timescale, the continuous removal of upper crustal material may have resulted in the local exhumation of a crustal-scale structure. This consequential rock uplift would have maintained a steep topographic gradient at the southeastern margin of the Tibetan Plateau, such that the high relief and elevated erosional fluxes observed today may in fact have persisted for many millions of years in the eastern Himalayan landscape. This idea presents an intreseting concept in landscape evolution – that the legacy of processes shaping the surface of the Earth may extend much deeper to direcly influence the dynamics of the Earth's crust.

This thesis specifically evaluates the circumstances by which rapid exhumation of

the eastern syntaxis initiated and has been sustained in the Late Cenozoic. To do this, I extend the existing Late Pliocene and Pleistocene exhumation history by interpreting detrital evidence from syntaxis-proximal foreland basin deposits. First, I reconstruct continental-scale river drainage patterns from detrital analyses of foreland basin units, demonstrating a connection of the Yarlung-Siang-Brahmaputra River prior to the Middle or Early Miocene. Second, I document the potential of glacial ice and debris dam-burst flood events to exacerbate Quaternary erosion rates within this connected river system. Finally, I interpret the cooling histories of detrital minerals in the same foreland basin units to constraining the onset of rapid exhumation rates in the Late Miocene.

I conclude from this work that an antecedent river has locally sustained rapid exhumation of the eastern syntaxis since the Late Miocene. In the Late Miocene, localized tectonic uplift accelerated exhumation where an antecedent river crossed the southeastern Tibetan Plateau margin. By the Early Pliocene, thermo-mechanical feedbacks between surface erosion and rock uplift may have developed to sustain rapid exhumation rates at the plateau margin to the present day.

1.1 A take home message

A wise advisor once told her student to begin their argument with the most important message, a single message the audience should take home with them, if nothing else. The message to take home from this thesis is that quite a lot can be learned about a landscape from the byproducts of its destruction, perhaps even more than can be gleaned from its present exposure. The landscape investigated herein, the eastern Himalayan syntaxis, is full of superlatives: mountains that are arguably as steep as they can be (e.g., Larsen and Montgomery, 2012) beside one of Earth's deepest river gorges. The prodigious sediment evacuation resulting from the erosion of this landscape dominates the downstream sediment flux that feeds the great Brahmaputra River (e.g., Stewart et al., 2008) itself one of the largest contributors of terrestrial sediment to the global oceans (Milliman and Farnsworth, 2011).

This landscape is anomalous even in comparison to the broader Himalaya (Finlayson et al., 2002) the largest mountain range on Earth, and so it seems natural that it may have similarly anomalous origins. Current hypotheses invoke the taming of a large Tibetan torrent by a trifling Himalayan tributary (e.g., Clark et al., 2004), or of the rapid invasion of icy dams to steal a mighty river's bite (e.g., Korup and Montgomery, 2008). Yet, though the present landscape is not unfamiliar to catastrophe, the adjacent foreland contains a long history of dramatic change. I interpret this sedimentary record grain-by-grain, literally digging into the archives to unearth the secrets of this unique landscape.

1.2 Background

1.2.1 Uplift, exhumation and erosion

Terms referring to the displacement of earth materials with respect to a constant (perhaps conceptual) reference elevation should be precisely defined (England and Molnar, 1990). Within this text, rock or tectonic "uplift" is defined as the movement of crustal material in the opposite direction of gravity and rock "exhumation" is defined as the movement of crustal material toward the Earth's surface (England and Molar, 1990). Within this framework, a change in the elevation of the Earth's surface is simply the difference between rock uplift and rock exhumation.

Rock uplift is primarily accomplished within the Himalaya by tectonic processes of folding and reverse faulting, although isostatic compensation of eroded material is also important regional component (Montgomery, 1994). Rock exhumation results from normal faulting, ductile thinning within the lithosphere or surface erosion (Ring et al. 1999). Within this text, I consider only exhumation by surface erosion (primarily glacial, fluvial and hillslope erosion), which is considered to be the dominant process exhuming the region of interest (Zeitler et al., 2001) as evidence for signifcant normal displacement on local structures is atypical (Kidd et al., 2006; Zeitler et al., 2014).

1.2.2 Landscape evolution

Geologists have long looked to the mountains to understand the processes shaping Earth's surface. Early models of landscape evolution conceptualized a geomorphic cycle of periodic rejuvenation and decay (e.g., Davis, 1899; Penck, 1953) wherein landscapes originate from, and inevitably return to a low relief surface. Hack (1975) is often credited with formally introducing the concept of a dynamic equilibrium to discussions of landscape evolution (this could perhaps be better attributed to Gilbert, 1880) by proposing that topography will reflect a balance between surface erosion and rock uplift provided sufficiently long spans of geological time. Generally, this steady state is anticipated from the strong dependence of erosional efficacy on topographic relief (Ahnert, 1970) and elevation (through glacial erosion, e.g., Hallet et al., 1996), which function as a negative feedback on the growth of topography.

Either conceptualization may be an accurate characterization of Earth surface processes depending on the temporal and spatial scale considered. In this thesis, I consider the evolution of a portion of an active tectonic plate boundary (~100,000 km^2) over a Late Cenozoic timescale (< 23 Myr). At these scales, tectonic convergence between the Indian and Eurasian plates has been sustained (Molnar and Stock, 2009) and the tectonic addition of crustal material to the Himalayan orogen has progressively uplifted rocks, generating topography along the convergence zone (e.g., Harrison et al., 1992; Fielding, 1996) such that this orogenic growth presents a dynamic system that would similarly tend toward an steady state (e.g., Adams, 1980).

This steady state condition itself requires additional clarification. Willet and Bandon (2002) specify four distinct types of steady states, largely defined by the type of data used to interpret them. Of these, a flux steady state is achieved when the tectonic accretionary flux and erosional flux (often sediment flux from mountain rivers) are equal. A thermal steady state is satisfied when the thermal structure of an orogen becomes time-insensitive. This thermal steady state may only be achieved when the rate of material flux through the orogen becomes constant, as advection of crustal heat may steepen near surface geothermal gradients (Stuwe et al., 1994). Ultimately an exhumational steady state may be documented with radiometric cooling ages, such as from low-temperature thermochronometry, which may be interpreted to record constant exhumation rates over an extended period of time (Reiners and Brandon, 2006).

A growing body of research suggests that an exhumational steady state may have characterized portions of the main Himalayan front during the Late Cenozoic (e.g., Bernet et al., 2006; Chirouze et al., 2013), however these observations are not readily extended to the ends of the Himalayan orogen, where the transition from convergent to strike-slip motion warps the plate boundary southward. The Himalayan syntaxes expereince extremely rapid and focused exhumation that may exert an additional positive feedback on rock uplift (Zeitler et al., 2001), accelerating rock uplift and exhumation over time (e.g., Cervery et al. 1988; Bernet and Garver, 2005).

1.2.3 Feedbacks in the Himalayan syntaxes

Numerical (e.g., Beaumont et al., 1992), analog (e.g., Malavielle, 2010) and analytical (Dahlen and Suppe, 1988) experiments demonstrate that rapid, focused surface erosion of convergent orogens may localize regional strain gradients, concentrating exhumation within the area of rapid erosion. When rapid surface erosion is prolonged and sufficient upper crustal material is removed, a thermo-mechanical relationship may develop wherein the rock uplifted from lower lithospheric levels advects heat into the upper crust, steepening the near surface geothermal gradient (Stuwe et al., 1994) and increasing the susceptibility of the upper crust to subsequent deformation (Koons et al., 2002). In this situation, the rate of rock exhumation increases over time such that neither a thermal nor exhumational steady state is maintained. In such a region, topographic relief should increase to a maximum value limited only by internal rock strength and valley spacing (Montgomery and Brandon, 2002). Ultimately, these feedbacks lead to localized "hot spots" of very steep topography, high geothermal gradients and rapidly exhumed, crustal-scale structures (Zeitler et al., 2001).

Such a relationship between surface erosion and rock exhumation is best observed within the Himalayan syntaxes (Zeitler et al., 2001; Koons et al., 2013). Both regions exemplify the predicted final condition of thermo-mechanical feedbacks, with the coincidence of efficient erosional systems, steep topography and rapidly exhumed metamorphic massifs (Finlayson et al., 2002). However, a detailed exhumation history of the syntaxes remains elusive. Abundant bedrock and detrital thermochronology from both syntaxes detail extremely rapid rock exhumation rates since the Late Pliocene or Pleistocene (e.g., Winslow et al., 1996; Burg et al., 1998), but this rapid cooling associated with this exhumation restricts interpretation prior to this time. Similarly, while antecedence of syntaxial rivers has long been speculated (e.g., Harrison et al., 1992) remarkably few data constrain the Late Cenozoic evolution of these drainage systems.

Presently, the exhumation history of the western syntaxis is best constrained and the existing data support the interpretation of a positive feedback between surface erosion and rock uplift in the Late Cenozoic. While Brookfield et al. (1998) speculated that the Indus River may have once drained northwestward into the Gilgit valley, a more recent study by Clift et al. (2001) favors the early establishment of an antecedent Indus River in the Paleogene. Moreover, the highly influential work by Cerveny et al. (1988) documents increased rates of rock exhumation within the western syntaxis since at least the Middle Miocene (Bernet and Garver, 2005).

This thesis focuses on the exhumation history of the eastern syntaxis. Some preexisting evidence indicates that the Brahmaputra River may have connected through to Tibet since at least the Late Miocene (Galy et al., 2010), however the location of this connection through the eastern syntaxis is disputed (e.g., Clark et al., 2004; Cina et al., 2009). Moreover, the erosional efficacy of an antecedent river through the syntaxis may have been dramatically altered in the Quaternary by glacial and landslide damming (Montgomery et al., 2004), potentially focusing exhumation within the Tsango Gorge region (Korup and Montgomery, 2008). The only detrital record of syntaxial exhumation is interpreted from Siwalik foreland units over 200 km downstream from the Brahmaputra River headwaters (Chirouze et al., 2013) and do not apparently support increasing Late Cenozoic exhumation rates within the eastern syntaxis.

To better constrain the Late Cenozoic exhumation history, drainage reorganization, and the potential influence of Quaternary glacial damming upstream of the eastern syntaxis this thesis applies a diverse suite of field observations and laboratory analyses to interpret Quaternary and Neogene foreland basin units from locations proximal to the syntaxis.

1.3 Research objectives

This thesis has three research objectives, each addressed in the following chapters. First, to determine when a river initially drained through the eastern Himalayan syntaxis. I accomplish this by interpreting the sedimentary provenance of Neogene foreland basin units with detrital zircon geochronology at several locations proximal to the eastern syntaxis. Second, to assess the potential impact of Quaternary ice and debris damming in the headwaters of a syntaxial drainage, I similarly interpret the sedimentary provenance of Quaternary flood deposits along the Siang River valley. I use a simple mixture model to evaluate the potential impact of a dam-burst flood event to determine if such events may have had an important erosional impact on the landscape. Third, to extend the exhumation history of the eastern syntaxis before the Pleistocene and Late Pliocene, I interpret detrital mineral cooling ages from the best studied foreland basin units proximal to the Brahmaputra River confluence. I use simple thermal modeling to interpret mineral cooling as a proxy for paleo-exhumation rate, to evaluate if an exhumational equilibirum characterized the eastern syntaxis in the Neogene.

1.4 Motivations for study

1.4.1 Interpretation of the sedimentary record

Feedbacks between surface erosion and rock uplift could hypothetically sustain prodigious sediment discharges from the eastern syntaxis. Today, nearly half of the sediment carried into the foreland by the Yarlung-Siang River originates in only ~3% of the drainage area. If similar conditions were typical of the Neogene, this rapid sediment production may have profoundly influence proximal deposition within the basin, potentially compliating interpretations of proximal and distal basin records.

The flux of sediment from an eroding upland is one of the most important variables controlling the development of sedimentary basins (Allen et al., 2013). Terrestrial sedimentary basins are significant sources of freshwater, fossil fuel, and agricultural resources as well as popular dwellings for a large portion of humanity (the eastern Himalayan foreland is no exception to this). Moreover, these basins are valuable archives of Earth history, recording global tectonic (e.g., Copeland and Harrison, 1990) and climatic (e.g., France-Lanord and Derry, 1997) change in the Late Cenozoic. In the conceptual model I investigate, localization and acceleration of rock exhumation may profoundly influence interpretation of these sedimentary records by biasing sediment provenance to rapid erosion of the syntaxes. Moreover, understanding of source region exhumation and the development of continental scale drainage patterns eucidates the age and distribution of large distal basins (e.g., Métivier et al., 1999).

1.4.2 Connection to global climate

Mountain exhumation may have played an important role in global climate regulation during the Late Cenozoic (Raymo and Ruddiman, 1992). Development of high topography, such as that resulting from uplift of the Tibetan Plateau physically disrupts atmospheric circulation, focusing erosion to the windward sides of orogens (e.g Ruddiman and Kutzbach, 1989; Willet, 1999). Enhanced erosion promotes the physical disintegration and comminution of rocks, exposing silicate mineral surfaces to chemical dissolution. Ultimately, this may result in net sequestration of atmospheric carbon, as well as the rapid burial of organic carbon. Carbon trapped in large sedimentary basins (e.g., the Bengal fan) is effectively removed from the atmosphere over a geological timescale, ultimately cooling the planet.

Furthermore, mountain exhumation may feed back on the development of mountainous topography, as erosion is isostatically (e.g., Molnar and England, 1990) or dynamically (e.g., Beaumont et al., 2001) compensated with increased rock uplift. Within this context, definition and documentation of the feedbacks between surface erosion and rock uplift are critical steps toward a broader understanding of the Earth's climatic history, offering some explanation of the geological contributions to observed fluctuations in atmospheric temperature and ocean chemistry.

1.5 Course of study

This research presented in this thesis was carried out over a period of six years between 2008 and 2014. During this time, three field expeditions in Spring 2008, Winter 2010-2011 and Winter 2012-2013 provided the opportunities for field observation, measurement, and sample collection for the interpretations made herein. This research employs field mapping and stratigraphic surveying, magnetostratigraphy, modal analysis, detrital zircon U-Pb geochronology and fission-track thermochronology, and detrital muscovite $^{40}Ar/^{39}Ar$ thermochronology of modern river sediment, Quaternary alluvial deposits and a Quaternary-Neogene depositional sequence. All mineral separation and sample preparation were conducted at the University of Washington, and geochronological and thermochronological analyses were carried out at various collaborative institutions between 2010 and 2014 (details for each dataset are presented in their respective chapter). Data analysis and interpretation was subsequently carried out by the author at the University of Washington, often in consultation with members of the thesis committee and other members of the graduate students and faculty.

1.6 Presentation of results

This research is presented in three parts. First, to determine if connection of the Yarlung and Brahmaputra rivers through the Siang River predated Late Pliocene and Pleistocene exhumation of the Namche Barwa massif, I used detrital zircon U-Pb geochronology to determine the sedimentary provenance of Neogene units in the easternmost portion of the eastern foreland basin. This work, entitled *Antecedence of the Yarlung-Siang-Brahmaputra River, eastern Himalaya* has been published in *Earth and Planetary Science Letters*.

Second, to determine if glacial ice and debris damming of rivers draining into the Tsangpo Gorge may have focused Quaternary exhumation at the margin of the Tibetan Plateau, I use detrital zircon U-Pb geochronology and modal analysis to determine the provenance of enigmatic slackwater flood deposits along the Siang River valley. I use a simple analytical model to constrain the amount of material a hypothetical dam-burst flood might transport in a worst-case, catastrophic scenario. This work, entitled *Erosion of the Tsangpo Gorge by Megafloods, eastern Himalaya* has been published in *Geology*.

Lastly, to extend the exhumation history of the eastern syntaxis region before the Late Pliocene, I combines detrital zircon fission-track and muscovite $^{40}Ar/^{39}Ar$ thermochronology with previous zircon U-Pb analyses from the same Neogene units investigated in the second chapter. I used a simple thermal model to constrain the timing and magnitude of an increase in syntaxial exhumation rate. This work, entitled *Late Miocene exhumation of the eastern Himalayan syntaxis from analysis of foreland basin deposits* has been prepared for submission to the *Geological Society of America Bulletin*.

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CHAPTER 2: Antecedence of the Yarlung-Siang-Brahmaputra River, eastern Himalaya

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2.0 Abstract

At the eastern terminus of the Himalayan orogen, distortion and capture of southeast Asian drainage basins reflects regional patterns of crustal strain due to the indentation of the Indian Plate into Eurasia. After flowing eastward >1000 km along the southern margin of Tibet, the Yarlung–Siang–Brahmaputra River turns abruptly southward through the eastern Himalayan syntaxis rapidly exhuming a crustal scale antiform in an impressive >2 km knickpoint. This conspicuous drainage pattern and coincidence of focused fluvial incision and rapid rock exhumation has been explained by the capture of an ancestral, high-elevation Yarlung River by headward erosion of a Himalayan tributary. However, recent observation of Tibetan detritus in Neogene foreland basin units complicates this explanation, requiring a connection from Tibet to the foreland prior to the estimated onset of rapid rock exhumation. We constrain the sedimentary provenance of foreland basin units deposited near the Brahmaputra River confluence in the eastern Himalayan foreland basin using detrital zircon U–Pb geochronology. We interpret the significant presence of Gangdese-age detritus in each foreland basin unit to indicate that connection of the Yarlung–Siang–Brahmaputra River was established during, or prior to foreland deposition in the Early Miocene. Our results indicate that connection of the Yarlung–Siang–Brahmaputra River precedes exhumation of the syntaxis, demonstrating the potential for the progressive coevolution of rock uplift and rapid erosion of the Namche Barwa massif.

2.1 Introduction

The peculiar drainage patterns of large southeast Asian rivers reflect a complex history of crustal deformation and river reorganization. For example, distortion of the upper Salween, Mekong and Yangtze rivers may be explained by warping of antecedent drainage basins (e.g., Burrard and Hayden, 1907; Brookfield, 1998; Hallet and Molnar, 2001) from collision of the eastern Indian Plate margin with the Eurasian Plate (e.g., Peltzer and Tapponier, 1988; Holt et al., 1991; Royden et al., 1997; Sol et al., 2007) beginning in the Early Eocene (Searle et al., 1987; Garzanti and Van Haver, 1988; Yin, 2006; Najman, 2006). Near the Indian indentor corner in the eastern Himalayan syntaxis (Figure 1), locally steepened river channels (e.g., Seeber and Gornitz, 1983), barbed tributaries (e.g., Burrard and Hayden, 1907; Burchfiel et al., 2000; Clark et al., 2004) and low drainage divides within the Yarlung–Siang–Brahmaputra drainage basin provide evidence that such distortion can culminate in drainage reorganization by capture and reversal (e.g., Clark et al., 2004; Clift et al., 2006).

Of particular interest is a ~100 km reach where the Yarlung–Siang–Brahmaputra River abruptly bends southward through the eastern syntaxis after flowing eastward >1000 km along terrane boundaries (Brookfield, 1998), dropping >2 km from the Tibetan plateau between >7 km Himalayan peaks. This anomalously steep (Seeber and Gornitz, 1983) and narrow (Montgomery, 2004) reach (i.e. knickzone) known as the Tsangpo gorge, is a locus of extremely rapid and focused erosion (e.g., Finlayson et al., 2002; Finnegan et al., 2008; Stewart et al., 2008; Larsen and Montgomery, 2012) coincident with an active crustal-scale antiform, the Namche Barwa massif (Figure 2A;

e.g., Burg et al., 1997, 1998; Ding et al., 2001; Kidd et al., 2006; Quanru et al., 2009; Xu et al., 2012a). Thermochronological, geochronological and petrological analyses of metamorphic and anatectic bedrock in the core of the massif constrain rapid exhumation rates exceeding 5 km/Myr since at least the Pliocene (Burg et al., 1998; Malloy, 2004; Seward and Burg, 2008) or Late Miocene (Ding et al., 2001; Booth et al., 2009; Xu et al., 2012a), and analyses of erosional efflux further indicate that modern erosion rates are also high (e.g., Galy and France-Lanord, 2001; Singh and France-Lanord, 2002; Garzanti et al., 2004; Pik et al., 2005), potentially exceeding 10 mm/yr (Stewart et al., 2008; Enkelmann et al., 2011).

Initiation of such rapid exhumation has been explained by the capture of a high elevation, ancestral Yarlung drainage basin via headward erosion of a steep Himalayan tributary (Figure 2B; e.g., Burrard and Hayden, 1907; Gregory and Gregory, 1925; Seeber and Gornitz, 1983; Brookfield, 1998; Clark et al., 2004). The resulting increase in drainage area and discharge to a knickzone at the point of capture would have increased the river's erosional potential, causing the knickzone to propagate upstream in a wave of incision. However, this knickzone has not relaxed into the Tibetan plateau as predicted by a simple model of upstream propagation (Finnegan et al., 2008), but has instead remained at the margin of the Tibetan plateau in the vicinity of the Namche Barwa massif.

Alternatively, connection of the Yarlung and Siang Rivers may predate uplift of the Namche Barwa massif (e.g., Harrison et al., 1992; Seward and Burg, 2008), in which case the Tsangpo gorge would represent a stationary knickzone resulting from localized uplift of the massif due to lithospheric buckling (e.g., Burg et al., 1998; Burg and Podladchikov, 1999) or geometric stiffening of the indenting margin of the Indian Plate (e.g., Ehlers and Bendick, 2013). Localized rock uplift will steepen the equilibrium channel profile of rivers crossing the massif, locally increasing the potential for fluvial incision (Whipple and Tucker, 1999) and it has been proposed that rapid incision of an uplifting massif may eventually lead to a thermo-mechanical feedback (e.g., Koons, 1995, 1998; Koons et al., 2013; Zeitler et al., 2001) sustaining rapid rock exhumation and explaining the locally high topography (Finlayson et al., 2002; Finnegan et al., 2008), elevated geothermal gradient (Craw et al., 2005) and antiformal structure (Koons et al., 2002; Simpson, 2004) observed in the vicinity of the Tsangpo gorge. Seward and Burg (2008) noted that if the Yarlung–Siang connection predated uplift of the massif, the geomorphic evidence for reversal of the Parlung River (e.g., barbed tributaries to the Parlung River and the low divide in Figure 1; Burchfiel et al., 2000; Clark et al., 2004) may indicate that lateral propagation of the antiform forced the capture of an ancestral Yigong–Parlung River by the Yarlung–Siang–Brahmaputra (Figure 2C).

In this paper, we investigate the integration of the Yarlung–Siang–Brahmaputra River with new detrital zircon U–Pb provenance constraints from sedimentary units deposited along the eastern extent of the Himalayan foreland basin. Provenance analysis allows us to constrain the timing of Yarlung–Siang–Brahmaputra integration from the proximal sedimentary record, expanding on the prior work from sedimentary sections south of the Subansiri River (Cina et al., 2009; Chirouze et al., 2013) to determine when the Yarlung and Brahmaputra Rivers connected through the Siang. We use the collective dataset to interpret the Neogene evolution of rivers draining into the eastern Himalayan foreland, placing new constraints on the relationship between fluvial incision and tectonic deformation in this dynamic region.

2.2 Background

2.2.1 Sedimentary units of the eastern Himalayan foreland basin

Our study focuses on samples from three sedimentary sections exposed in the Himalayan foothills along the margin of the eastern Himalayan foreland basin near the town of Pasighat and the villages of Likabali and Kimin (Figure 1). Of these three sections, the two near Likabali and Pasighat are upstream of the Subansiri-Brahmaputra River confluence, and the one near Kimin is downstream of the confluence.

Beginning in the Pleistocene (Kumar, 1997; Chirouze et al., 2013), movement on the Tipi Thrust and Main Frontal Thrust has uplifted a sequence of sedimentary rocks estimated to be at least ~6 km (Jain et al., 1974; Agarwal et al., 1991; Chirouze et al., 2012) and as much as ~10 km thick (Karunakaran and Ranga Rao, 1976; Ranga Rao, 1983; Kumar, 1997). GPS data indicate that convergence across the eastern Himalaya is dominantly perpendicular to the mountain front with a maximum of 6–7 mm/yr of sinistral movement in the eastern Himalaya (see compilation in Burgess et al., 2012). If convergence was similar throughout the Neogene (e.g., Molnar and Stock, 2009), the foreland basin units exhumed at the mountain front should have originally been deposited near the orthogonal position of their present exposure.

The sedimentary rocks exposed in these sections comprise an upward-coarsening clastic sequence broadly interpreted to represent filling of a peripheral foreland basin with detritus shed from the rising Himalaya (e.g., Ranga Rao, 1983; Kumar, 1997; Najman, 2006). Three lithologically distinct units are observed within this sequence (Jain et al., 1974; Ranga Rao, 1983; Agarwal et al., 1991); progressing up-section these are: (1)

alternating beds of fine grained sandstone with carbonaceous shale, followed by (2) very thickly bedded, massive and cross-bedded medium to coarse grained sandstone with coalified logs, centimeter to meter scale calcareous nodules and gravel to cobble channel lag deposits, and (3) interbedded siltstone, sandstone, and clast supported gravel to cobble conglomerate with coarse to very coarse grained sand and silt lenses. The ages of the depositional contacts between each unit are paleontologically (Ranga Rao, 1983; Kumar, 1997) and magnetostratigraphically (Chirouze et al., 2012) constrained to ~10–11 Ma between the lower and middle units, and ~2–3 Ma between the middle and upper units.

Regional literature classifies these three units as the Dafla, Subansiri and Kimin formations, respectively (e.g., Ranga Rao, 1983; Kumar, 1997; Cina et al., 2009; Burgess et al., 2012); however, the units are loosely correlated to the Lower, Middle and Upper Siwalik units in the Western and Central Himalaya (e.g., Ranga Rao, 1983; Kumar, 1997; Najman, 2006; Chirouze et al., 2012), a terminology we adopt for consistency with the broader Himalayan literature.

Field observations from the Likabali section provide some indication of the sedimentary provenance of the units. Clast lithologies of conglomeratic beds in the Upper Siwalik unit contain variously colored quartzite (red, green, white, gray), volcanic rocks including amygular basalt, high-grade metamorphic rocks including gneiss and schist, and dolomite (Jain et al., 1974). We observed these clast lithologies in conglomerate beds across the Upper-Middle Siwalik transition as well as in channel lag gravels within the Middle Siwalik unit, where amygdular basalt, gneiss, volcanic breccia, quartzite (red, purple, white, gray), vein quartz, and dolomite first appear. These clast lithologies are generally characteristic of Lesser Himalayan metasedimentary units in the eastern Himalaya (e.g., Singh, 1993; Kumar, 1997; Acharyya, 2007; Yin et al., 2010; Kesari, 2010), but the distinct presence of volcanic rocks suggests a specific source region from the 'Abor volcanics' exposed along the Siang River (e.g., Jain and Thakur, 1978; Ali et al., 2012).

Paleocurrent indicators from multiple sections in the eastern Himalaya consistently show either south or southwest paleoflow directions, indicating that source areas remained north of sample locations during deposition of this sedimentary sequence. South-directed paleocurrent indicators, have been observed in the Upper Siwalik unit from imbricate pebbles near Itanagar (Cina et al., 2009) and cobbles near Likabali (Jain et al., 1974) and Bhalukpong (Kesari, 2010). Paleocurrent indicators in the Middle Siwalik unit indicate a variable (Chirouze et al., 2013), but dominantly southwest-directed paleoflow direction as measured on cross-bedding in pebbly conglomerate lag deposits near Itanagar (Cina et al., 2009) and Bhalukpong (Kesari, 2010; Chirouze et al., 2013). A dominantly southwest-directed paleoflow is also interpreted from cross-bedding in the Lower Siwalik unit near Bhalukpong (Chirouze et al., 2013).

Collectively, field observations support the interpretation of a fluvial depositional environment for the Lower and Middle Siwalik units and an alluvial-fan environment in the Upper Siwalik unit (e.g., Karunakaran and Ranga Rao, 1976; Kumar, 1997; Chirouze et al., 2012). The presence of Himalayan-derived clasts including volcanic rocks observed by us and by Jain et al. (1974) near Likabali suggests some component of basin detritus was derived from the Siang valley during the deposition of the Middle and Upper Siwalik units. The transition from southwest to south-directed paleoflow directions observed from the Middle to Upper Siwalik units may represent transition from deposition in an expansive southwest directed fluvial braidplain (similar to the modern Brahmaputra River) to local deposition by south directed tributaries (e.g., the Subansiri River) and alluvial fans proximal to the mountain front. Alternatively, this change could represent natural variability within an expansive braidplain (Cina et al., 2009) or post-depositional counter-clockwise rotation of these units (Chirouze et al., 2012).

2.2.2 Provenance constrains from detrital zircon U-Pb geochronology

Single-grain U–Pb dating of detrital zircon cores provides a useful approach to assess sedimentary provenance in the Himalayan foreland basin (e.g., DeCelles et al., 1998; Bernet et al., 2006; Cina et al., 2009). This approach is particularly useful in the eastern Himalayan syntaxis, where published bedrock and detrital ages characterize the range of ages from specific source terranes (e.g., Stewart et al., 2008; Liang et al., 2008; Cina et al., 2009; Zhang et al., 2012; Lang et al., 2013; Robinson et al., 2013). We compiled published datasets from Himalayan and Tibetan source terranes within the eastern syntaxial region to constrain the range of ages contributed from each terrane (Figure 3).

Zircons older than 300 Ma most often represent inherited or detrital grains characteristic of Himalayan and Tibetan units (e.g., DeCelles et al., 2000; Yin et al., 2010; Gehrels et al., 2011; Zhang et al., 2012; Webb et al., 2012), with the important exceptions of some Early Cretaceous-Triassic zircons reported in the Lhasa Terrane (e.g., Leier et al., 2007; Zhu et al., 2011; Li et al., 2013; Lin et al., 2013a), Tethyan Himalaya (e.g., Zhu et al., 2008; Aikman et al., 2008, 2012; Li et al., 2010; Zeng et al., 2011; Webb et al., 2012), and Indus-Tsangpo Suture Zone and adjacent basins (e.g., Wu et al., 2010; Aitchison et al., 2011; Wang et al., 2011; Cai et al., 2012).

Zircons younger than 300 Ma most often represent primary grains from Paleogene–Cretaceous igneous units in Tibet; they may also represent contributions from Neogene–Paleogene igneous units in Tethyan and Greater Himalayan sequences in the Arunachal Himalaya (e.g., Aikman et al., 2008; Hu et al., 2010; McQuarrie et al., 2008; Yin et al., 2010; Zeng et al., 2011; Hou et al., 2012) and Neogene metamorphic units within the vicinity of the Namche Barwa massif (e.g., Ding et al., 2001; Chung et al., 2003, 2009; Booth et al., 2004; Xu et al., 2010, 2012a; Zhang et al., 2010b, 2010c; Guo et al., 2012; Su et al., 2011; Zeng et al., 2012; Lin et al., 2013a; Xu et al., 2013). While these <300 Ma zircons are rare in detrital populations from sediment samples collected in Himalayan tributaries (<5% of the Kameng and Subansiri Rivers, Cina et al., 2009), they dominate sediment samples from Tibetan rivers (Figure 3).

Multiple source regions contribute <300 Ma zircons from north of the Indus Yarlung Suture Zone in Tibet (Figure 3). Gangdese plutons and volcanic units west of the Namche Barwa massif yield primarily Paleogene–Late Cretaceous zircons (e.g., Booth et al., 2004; Wen et al., 2008; Zhang et al., 2010a, 2012; Zhu et al., 2011; Guo et al., 2011, 2012; Ji et al., 2012; Guan et al., 2012; Zheng et al., 2012), while Bomi–Chayu igneous sources east of the Namche Barwa massif yield primarily Early Cretaceous zircons (e.g., Booth et al., 2004; Chiu et al., 2009; Liang et al., 2008; Xu et al., 2012b; Zhang et al., 2012; Lin et al., 2013b). Jurassic–Permian zircons are also observed from units in the Nyingoh River headwaters (e.g., Chu et al., 2006; Zhu et al., 2009, 2011; Guo et al., 2011; Zhang et al., 2012; Li et al., 2013; Lin et al., 2013c), and a few published zircon

U–Pb analyses from the Lohit Plutonic Suite suggest that this terrane may be a source of Early Cretaceous (Lin et al., 2013b; Haproff et al., 2013) as well as Late Cretaceous zircons (e.g., Lohit River sample of Cina et al., 2009). However, the limited data available for this particular region make this a source of uncertainty in our provenance analysis.

Source region is not the only factor influencing the relative density of detrital zircon U–Pb age probability. For example, age distributions may be strongly influenced by localized, short-term patterns of sediment delivery (e.g., Ruhl and Hodges, 2005; Stock et al., 2006; Avdeev et al., 2011), downstream dilution by contribution from local sources (Zhang et al., 2012), and the heterogeneous distribution of target minerals (i.e. zircon) in source terranes (e.g., Amidon et al., 2005; Duvall et al., 2012). Thus even when a large number of detrital grains is analyzed, the absence of a specific age component does not necessarily exclude the possibility that the corresponding source area was within the contributing area of the sample (Vermeesch, 2004). However, the presence of specific age components is a robust indicator of sedimentary provenance, requiring source terranes to have been within the contributing area of the basin concurrent with or prior to the time of sample deposition. With these considerations, we focus our provenance interpretations on the presence of distinct age components in Siwalik samples.

2.2.3 Previous constraints on Siwalik provenance in the eastern Himalaya

Coupled detrital zircon U–Pb and εHf analyses, as well as bulk εNd data constrain Siwalik Group provenance downstream of the modern Subansiri–Brahmaputra River confluence. Cina et al. (2009) have interpreted the presence of Paleogene–Early

Cretaceous zircons with εHf signatures similar to Gangdese sources as Gangdese detritus in Upper, Middle and Lower Siwalik units. The authors discuss that the presence of this detritus could be explained by either connection of the lower Yarlung River to the Siang River or the upper Yarlung River to the Subansiri River prior to capture by the Siang at some time during deposition of the Middle Siwalik unit, estimated to be before ~4 Ma (Clark et al., 2004). They prefer connection of the Yarlung and Subansiri rivers prior to ~4 Ma, given additional observations of changing paleoflow directions (from southwest to south) between deposition of the Middle and Upper Siwalik units.

Alternatively, the presence of Gangdese detritus and the change in paleocurrent direction in the Upper Siwaliks could be explained by recycling of Lower and Middle Siwalik units (as observed in the modern Subansiri River samples of Cina et al., 2009). Additional εNd isotopic work near Bhalukpong by Chirouze et al. (2013) demonstrates that the Middle Siwalik unit was sourced from a longitudinal river system draining Tibetan sources like the modern Brahmaputra since ~7 Ma, but indicates that this source changed to a transverse Himalayan river like the Kameng River during deposition of the Upper Siwalik unit. Pleistocene faulting at the mountain front (Kumar, 1997; Chirouze et al., 2013) would have exposed the Lower and Middle Siwalik units to erosion during deposition of the Upper Siwalik unit, providing an additional source of Gangdese detritus—an interpretation corroborated by evidence of growth strata in the uppermost portion of the Upper Siwalik formation near Bhalukpong (Burgess et al., 2012).

Determining when the Yarlung–Siang River connection was established is important for evaluating explanations for rapid exhumation of the Namche Barwa massif (e.g., initiation in response to rapid, focused river incision following capture of the

Yarlung by headward erosion of the Siang). As Cina et al. (2009) point out, if the Yarlung River connected to the Subansiri prior to capture by the Siang ~4 Ma, Upper Miocene foreland basin units east of the Subansiri River should not contain Gangdese-age detrital zircons. To test this prediction, we analyzed additional samples from Siwalik units exposed east of the Itanagar section and more proximal to the Siang–Brahmaputra River confluence.

2.3 Sampling and analytical methods

We collected 15 samples from the three sedimentary sections investigated. The approximate stratigraphic position of each sample is illustrated in Figure 4. At the section near Likabali we focused on detailing provenance changes with multiple samples from each Siwalik unit, and we evaluated variability of a single unit along strike of the Himalaya with additional Middle Siwalik samples collected near Kimin and Pasighat.

Near Likabali, we sampled compact fine-grained sandstones of the Lower Siwalik unit exposed between the Tipi Thrust and the Main Boundary Thrust. We collected six Middle Siwalik samples from medium to coarse sandstones exposed along the Siji River and in road exposures, where the unit is uninterrupted by faulting (Jain et al., 1974; Agarwal et al., 1991) between the Main Frontal Thrust and the conformable Upper-Middle Siwalik contact. We collected three samples from the Upper Siwalik unit including one from a medium sandstone interbedded with siltstone and gravel conglomerate beds above the Middle Siwalik contact, one from a coarse sandstone interbedded with cobble conglomerate in the middle of the unit, and one from a sand lens within the conspicuous boulder conglomerate at the top of the section near the Tipi

Thrust.

Additional Middle Siwalik samples were collected near Kimin and Pasighat from massive medium and coarse sandstones. The two Kimin samples were collected in river exposures between the Tipi Thrust and the Upper-Middle Siwalik contact, and the two Pasighat samples were collected in road exposures along the mountain front.

In preparation for isotopic analysis, sedimentary rock samples were manually disaggregated in a dilute HCl solution and wet sieved to isolate the 63–250 μm size fraction. Zircons were separated from this fraction by standard magnetic and heavy liquid techniques, mounted in epoxy, polished and imaged using highresolution electron backscatter detection and cathodoluminescence prior to isotopic analysis. U–Th–Pb analyses of a random selection of zircon cores by laser ablation, multicollector inductively coupled plasma mass spectrometry were carried out in two locations: at the University of Arizona LaserChron center and by Apatite to Zircon, Inc. Analyses at the University of Arizona LaserChron center were conducted on a Nu high resolution mass spectrometer coupled to a Photon Machines 193 nm excimer laser with a ~30 μm spot size (Gehrels et al., 2006, 2008). Analyses at Apatite to Zircon, Inc. were conducted on an Agilent 7700°ø quadrupole mass spectrometer coupled to a Resonetics RESOlution M-50 193 nm excimer laser with a ~30 μm spot size (Donelick et al., 2005; Chew and Donelick, 2012).

We analyzed at least 50 grains per sample (and many more when possible) with the goal of identifying the presence of <300 Ma zircons. Zircons of this age represent ~25% of detrital populations sampled in river sediment near Pasighat (Stewart et al., 2008) and ~10% of detrital populations sampled from Brahmaputra River sediment downstream

(Cina et al., 2009); by analyzing 50 grains we can be 95% confident that our analyses did not miss an age component representing >10% of the total (Vermeesch, 2004). The analytical data and details of standard calibration and isotopic corrections are presented in the Supplementary Material.

2.4 Results of detrital zircon U-Pb dating and provenance interpretations

A total of 1222 detrital zircon U–Pb analyses produced ages that range from 15 Ma to 3.3 Ga and confirm the presence of a significant component of <300 Ma zircons in each Siwalik unit (Figure 4). In the section near Likabali, about 20% of zircons in both of the Lower Siwalik samples and in the lowest Middle Siwalik sample are younger than 300 Ma. The three Upper Siwalik samples from this section contain a similar proportion of younger zircons (20–24%). The remaining five samples from this section may suggest an increase in the proportion of <300 Ma zircons during Middle Siwalik deposition—the young zircon population makes up >30% of each sample, and 70% of sample 5b. The additional four Middle Siwalik samples from Pasighat and Kimin are more variable (12–33% young zircons).

In all samples, <300 Ma zircons (333 of the total 1222 grains) are dominantly Paleogene–Late Cretaceous in age, similar to Gangdese bedrock from west of the Namche Barwa massif and detrital zircons from rivers draining that area (Figure 3). Early Cretaceous zircons characteristic of Bomi–Chayu sources are present in most samples in relatively smaller abundance, with the exception of one Middle Siwalik sample and one Lower Siwalik sample collected near Likabali that lack zircons of this age. Neogene zircons characteristic of young anatectic units from the Namche Barwa massif are rare.

We interpret the provenance of detrital zircons based on U–Pb age (although complimentary isotopic and modal analysis may further evaluate these interpretations), such that zircons with Paleogene–Late Cretaceous U–Pb ages represent Gangdese detritus and zircons with Early Cretaceous ages represent detritus from a Bomi–Chayu source. Older grains are not as diagnostic, but likely represent Jurassic and Triassic units observed within the Gangdese source area. When observed, Neogene zircons may represent sources in the Arunachal Himalaya or Namche Barwa specifically.

It is possible that some zircons in this age range could come from other sources. Paleogene zircons (specifically ~40–50 Ma) could alternatively represent igneous units in the Tethyan Himalaya; however these rocks are presently exposed over a very small region of the Himalaya and do not represent a significant component of modern Himalayan detrital sediments (e.g., Subansiri and Kameng River samples of Cina et al. (2009) shown in Figure 3). It is also possible that Paleogene and Cretaceous zircons may represent unobserved sources within the Lohit Plutonic Suite (Early Cretaceous ages in Lohit River sample may be evidence for this), but additional sampling of this region, specifically of the Dibang River drainage, is necessary to confirm this.

Sediment recycling could potentially introduce another source of uncertainty in provenance analysis. Recycling of exposed Siwalik units is an important source of detrital zircons in modern sediment samples (e.g., Cina et al., 2009) and may have been an additional source of zircons once Siwalik units where exhumed along the Himalayan mountain front in the Pleistocene. However, the absence of growth strata in all but the uppermost Upper Siwalik unit indicates that recycling was not likely to be an additional source of zircons until the very end of this depositional sequence, and thus is not a potential source of the zircons observed in Lower and Middle Siwalik units.

2.5 Discussion

Our results broadly corroborate previous observations of Gangdese detritus within eastern Himalayan foreland basin units (e.g., Cina et al., 2009; Chirouze et al., 2013), and place new constraints on the organization of rivers carrying this detritus into the basin. In particular, we observe Gangdese detritus in samples from the Middle and Lower Siwalik units upstream of the Subansiri–Brahmaputra River confluence, which we propose indicates a connected drainage system from Gangdese sources west of the Namche Barwa massif through the Siang River to the foreland basin at least since deposition of the Lower Siwalik unit began in the Early Miocene. These observations do not exclude the possibility of additional connections from Tibet through the eastern Himalaya during Siwalik deposition, such as between a transverse river like the Subansiri River and the upper ~2/3 of the present Yarlung drainage (Cina et al., 2009). However, an additional connection is not necessary to explain the collective dataset.

2.5.1 Antecedence of the Yarlung-Siang-Brahmaputra River

The collective detrital zircon U–Pb provenance dataset including the new data presented here, observations from the Siwalik Group sections near Itanagar and Bhalukpong (Cina et al., 2009) and from distal Brahmaputra River deposits (Najman et al., 2008) may be explained by antecedent drainage of the Yarlung–Siang–Brahmaputra River. The Gangdese detritus observed in our Middle and Lower Siwalik samples, as well as the Middle and Lower samples collected near Itanagar and the Middle Siwalik sample collected near Bhalukpong (Figure 4, Cina et al., 2009) may indicate deposition by a large southwest flowing river system that connected to the ancestral Yarlung River through the Siang River, a landscape similar to the present. This interpretation is consistent with paleocurrent indicators that indicate deposition of the Middle Siwalik by a southwest flowing river, and connection through the Siang River is further supported by the presence of volcanic clasts in the Middle and Upper Siwalik units.

The presence of Gangdese detritus in Upper Siwalik samples with south-directed paleocurrent indicators has been interpreted to indicate prior connection of the upper Yarlung and Subansiri Rivers (Cina et al., 2009). However, recycled detritus from the Lower and Middle Siwalik units may have been an additional source of zircons during deposition of the Upper Siwalik unit. Thus, south directed paleocurrent indicators in the Upper Siwalik unit could represent local deposition by a south-flowing transverse tributary near the mountain front (e.g., the Subansiri River).

Because the Yarlung River presently follows the Indus Yarlung Suture Zone for over 1000 km prior to entering the Tsangpo gorge, we speculate that the Yarlung–Siang–Brahmaputra River originally followed a similar eastern course along the suture (Figure 5A, Brookfield, 1998) after a potential reversal in the Early Miocene (Wang et al., 2013) yet prior to uplift of the Namche Barwa massif. Uplift of the massif progressively warped the suture zone into the distinct U-shape observed today (Figure 5B), and the river may have followed this warping until it eventually captured and reversed flow of the Parlung River (Figure 5C; Seward and Burg, 2008).

Although many of the Siwalik samples contain some Early Cretaceous zircons characteristic of Bomi–Chayu sources in addition to the dominant Gangdese component, we argue that this does not suggest that the Gangdese source region was connected to the foreland through the ancestral Parlung and Lohit Rivers. Drainage through the ancestral Parlung and Lohit Rivers would have entrained a larger component of Bomi–Chayu detritus immediately prior to entering the basin, yet Early Cretaceous zircons do not dominate the detrital population. Moreover, although this age range is characteristic of Bomi–Chayu igneous sources, it is also possible that Early Cretaceous zircons originated from unobserved northern igneous sources (e.g., the northern igneous belt of Zhang et al., 2012), and thus their presence does not demand routing of Gangdese detritus through the Lohit drainage. Rather, the dominance of Gangdese detritus in every sample we measured suggests that at least during deposition of the Middle and Lower Siwalik units, a river carried Gangdese detritus directly to the basin avoiding a more circuitous route through the ancestral Parlung and Lohit Rivers.

Observations of Gangdese detritus in Burmese basins (Robinson et al., 2013) require drainage from Gangdese sources into Burma prior to ~18 Ma. We propose that a separate, integrated Yigong–Parlung–Irrawaddy river may explain these observations until an Early Miocene capture event rerouted flow into the Lohit River (e.g., Clark et al., 2004; Robinson et al., 2013). The absence of Bomi–Chayu detritus in the lowest Lower Siwalik sample at Likabali may be consistent with this drainage configuration prior to capture by the Lohit, but additional analyses are necessary from the lowest Siwalik strata to confirm this.

2.5.2 Capture and reversal of the Parlung River

The geomorphic evidence for reversal of the Parlung River may be explained by capture of the ancestral Yigong–Parlung–Lohit River as lateral propagation of the Namche Barwa massif forced the Yarlung–Siang–Brahmaputra northward (Seward and Burg, 2008). Capture of the Yigong and Parlung drainage areas would have added Early Cretaceous zircons with a characteristic Bomi–Chayu provenance to the Yarlung–Siang–Brahmaputra sediment load, as is presently observed in modern river sediment sampled from the Siang River upstream of Siwalik exposures (see Figure 3). If this capture occurred in the Quaternary (Figure 5C), potentially influenced by glacial activity (e.g., drainage divide retreat – Oskin and Burbank, 2005; or temporary damming – Riedel et al., 2007; Korup and Montgomery, 2010), we might expect an increase of Early Cretaceous zircons in the uppermost Upper Siwalik unit. Our youngest sample collected near Likabali may be consistent with this prediction, but does not permit us to test this hypothesis due to the potential influence of sedimentary recycling and low number of analyses. Additional, and more detailed provenance analyses of the proximal Upper Siwalik samples and Late Quaternary terraces (e.g., Srivastava et al., 2008) near the Siang River confluence may further test this hypothesis to constrain the timing of capture and reversal of the Parlung River.

2.5.3 Exhumation of the Namche Barwa massif

Rapid exhumation of the Namche Barwa massif is estimated to have initiated in the Pliocene or Late Miocene. We propose that integration of the Yarlung–Siang–Brahmaputra river was established by at least the Early Miocene, which implies that rapid exhumation did not initiate in response to capture of the ancestral Yarlung River by headward erosion of the Siang. Instead, antecedence of the Yarlung–Siang–Brahmaputra

River demonstrates the potential for the progressive coevolution of rapid rock uplift and erosion of the Namche Barwa massif. Fluvial incision may amplify crustal deformation in the presence of regional compressive stresses (Simpson, 2004) as has been previously observed along Himalayan river anticlines (e.g., Montgomery and Stolar, 2006). We propose that coincident rock uplift associated with folding of the Namche Barwa antiform and erosion in the antecedent river channel locally increased exhumation rates at the margin of the Tibetan plateau without requiring a dramatic increase in drainage area. Sustained exhumation of the plateau margin, perhaps further increased after capture of the Yigong and Parlung Rivers, may have eventually removed enough crustal material to develop a thermo-mechanical feedback producing high topography over hot, weak crust (e.g., Zeitler et al., 2001; Koons et al., 2013).

2.6 Conclusions

We used detrital zircon U–Pb geochronology to determine the sedimentary provenance of Siwalik units exposed in three new locations in the eastern Himalayan foreland basin proximal to where the Yarlung–Siang–Brahmaputra River enters the basin. We observe a significant component of young, Paleogene–Late Cretaceous detrital zircons in all samples throughout the sedimentary sequence and interpret these ages to represent detritus from Gangdese source rocks west of the Namche Barwa massif. These results corroborate previous observations of Gangdese-age detritus within the eastern Himalayan foreland basin and further suggest that connection of the Yarlung–Siang–Brahmaputra River was established by the time deposition of the Lower Siwalik unit began in the Early Miocene. Rapid exhumation of the Namche Barwa massif is thought to have initiated later, in the Pliocene or Late Miocene, and therefore we propose that exhumation of the massif was not related to capture of an ancestral Yarlung River by headward erosion of the Siang River. Considering this, we prefer the explanation for reversal of the Parlung River via capture by an integrated Yarlung–Siang–Brahmaputra as the rivers were tectonically juxtaposed by lateral propagation of the Namche Barwa massif. Antecedence of the Yarlung–Siang–Brahmaputra River demonstrates the potential for the progressive coevolution of rock uplift, and fluvial incision of the Namche Barwa massif, such that sustained erosion at the plateau margin may have eventually initiated a thermo-mechanical feedback that focused crustal exhumation in the region.

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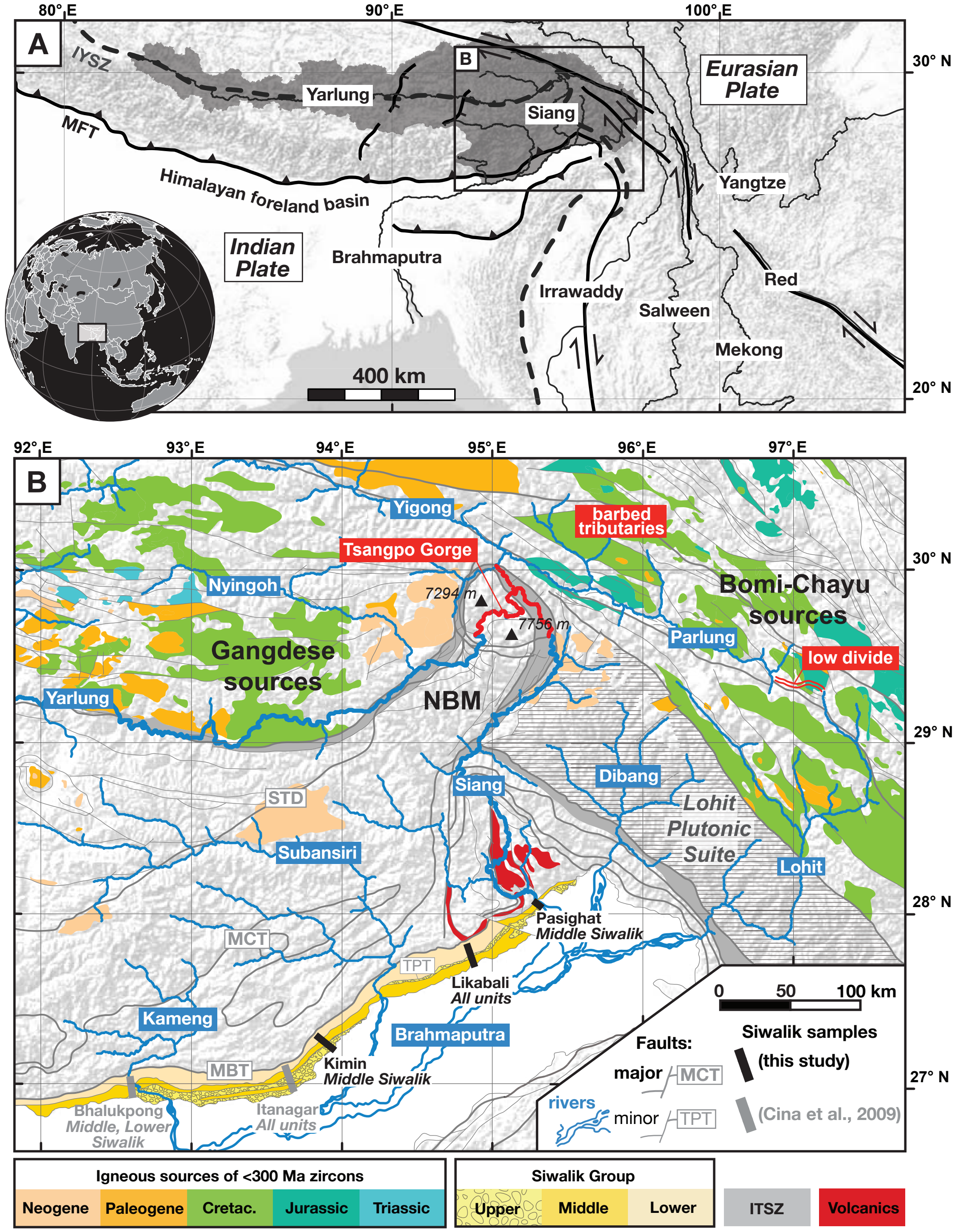
2.9 Figures

Figure 2.9.1 Study area in the eastern Himalayan syntaxis

Study area in the eastern Himalayan syntaxis. (A) The Yarlung River follows the Indus–Yarlung Suture Zone (IYSZ, dashed) along the southern margin of Tibet before sharply turning southward to flow through the eastern Himalayan syntaxis, becoming the Siang River prior to joining the Brahmaputra River in the eastern Himalayan foreland basin (drainage area shaded). (B) Compilation of regional geological mapping (from Armijo et al., 1989; Agarwal et al., 1991; Kidd et al., 2006; Pan et al., 2004; Acharyya, 2007; Misra, 2009; Yin et al., 2010) illustrates potential source areas for <300 Ma zircons in igneous rocks north of the IYSZ and within the eastern Himalaya. We sampled Siwalik foreland basin units from three new locations (Kimin, Likabali, Pasighat) to constrain sedimentary provenance upstream of previous observations near Bhalukpong and Itanagar (Cina et al., 2009; Chirouze et al., 2013). Major tectonic features are labeled for reference: the Tipi Thrust (TPT), Main Boundary Thrust (MBT), Main Central thrust (MCT), and South Tibetan Detachment (STD).



A
B
IYSZ
MFT
Yarlung
Siang
Eurasian Plate
Himalayan foreland basin
Yangtze
Indian Plate
Brahmaputra
Irrawaddy
Red
Salween
Mekong
400 km
80° E
90° E
100° E
30° N
20° N
92° E
93° E
94° E
95° E
96° E
97° E
29° N
28° N
27° N
Yigong
barbed tributaries
Tsangpo Gorge
Nyingoh
Bomi-Chayu sources
7294 m
7756 m
Parlung
Gangdese sources
low divide
Yarlung
NBM
Siang
Dibang
STD
Lohit Plutonic Suite
Subansiri
Lohit
Pasighat
Middle Siwalik
MCT
TPT
Likabali
All units
0 50 100 km
Kameng
Brahmaputra
Faults:
major MCT
minor TPT
Siwalik samples
(this study)
(Cina et al., 2009)
MBT
Kimin
Middle Siwalik
rivers
Bhalukpong
Middle, Lower Siwalik
Itanagar
All units
Igneous sources of <300 Ma zircons
Neogene
Paleogene
Cretac.
Jurassic
Triassic
Siwalik Group
Upper
Middle
Lower
ITSZ
Volcanics

Figure 2.9.2 Drainage evolution patterns

Modern drainage pattern and explanations of river capture and drainage evolution. (A) The torturous modern route of the Yarlung–Siang–Brahmaputra River across the rapidly exhuming Namche Barwa massif (defined by gray area of zircon fission-track (ZFT) cooling ages <2 Ma, Enkelmann et al., 2011). (B) Headward erosion of a Himalayan tributary may have captured an ancestral east-draining Yarlung River to initiate rapid exhumation at the capture location (e.g., Clark et al., 2004), or (C) lateral propagation of the massif may have forced an integrated Yarlung–Siang–Brahmaputra River to capture an ancestral east-draining Yigong–Parlung River (e.g., Seward and Burg, 2008).

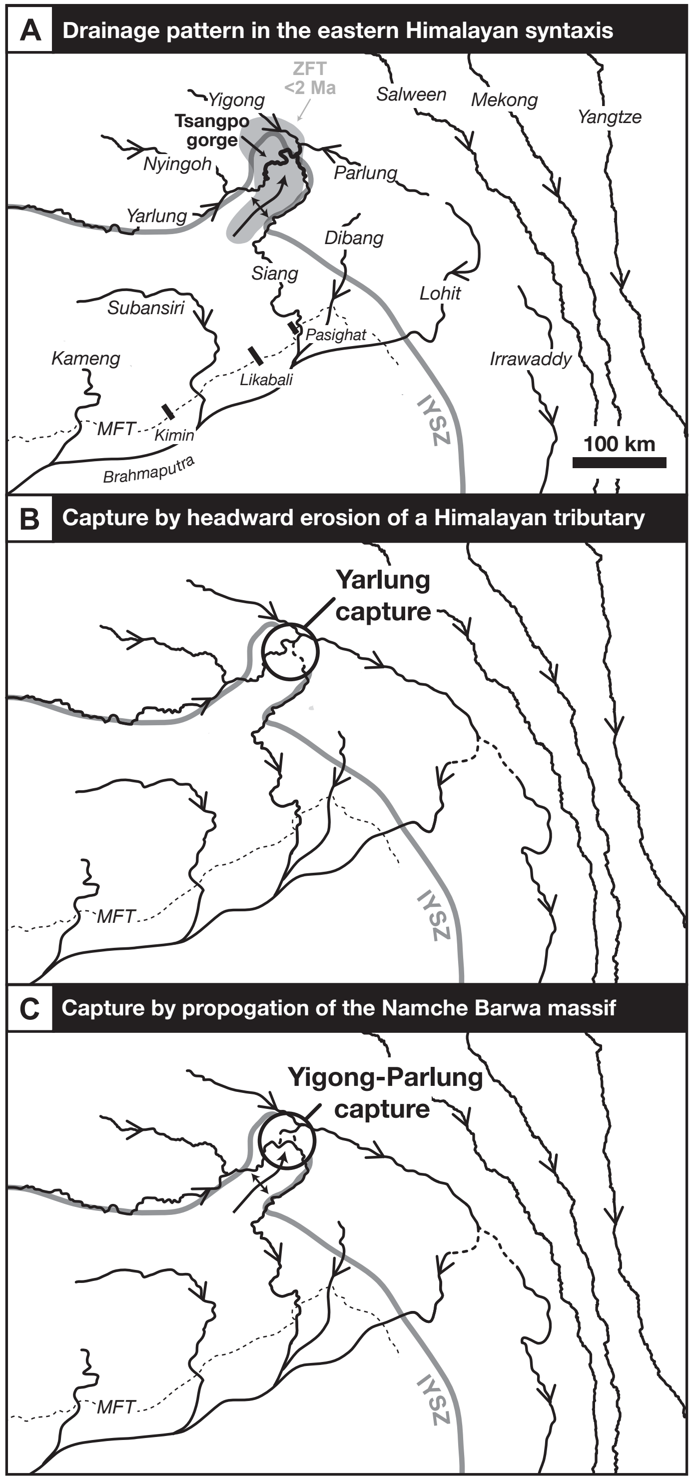
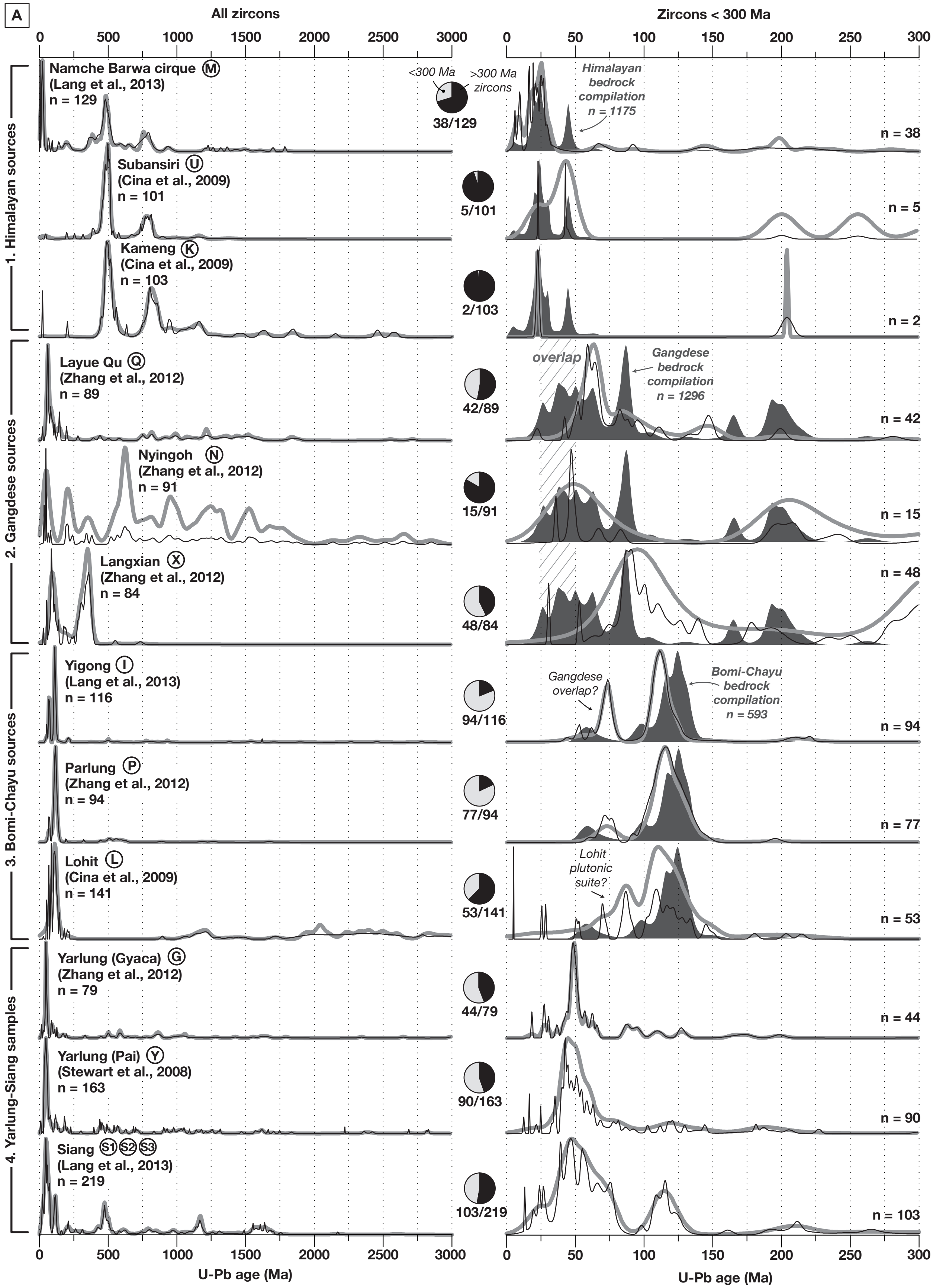

A
Drainage pattern in the eastern Himalayan syntaxis
ZFT
<2 Ma
Yigong
Tsangpo
gorge
Salween
Mekong
Yangtze
Nyingoh
Parlung
Yarlung
Dibang
Siang
Lohit
Subansiri
Pasighat
Kameng
Likabali
Irrawaddy
MFT
Kimin
IYSZ
100 km
Brahmaputra
B
Capture by headward erosion of a Himalayan tributary
Yarlung
capture
MFT
IYSZ
C
Capture by propogation of the Namche Barwa massif
Yigong-Parlung
capture
MFT
IYSZ

Figure 2.9.3 Published bedrock and detrital geochronology

Compilation of published bedrock and detrital zircon U–Pb ages from the eastern syntaxis region. (A) Compiled age data from 1. Himalaya, 2. Gangdese, 3. Bomi–Chayu sources, and 4. modern samples from the Yarlung and Siang rivers (see text for references). Ages from detrital samples are plotted as normalized summed probability density functions (thin black line) and kernel density estimates (thick gray line). Kernel density estimates are locally adapted to age density with a maximum smoothing bandwidth of 30 Ma (generated using the Density Plotter application of Vermeesch, 2012). Bedrock ages (<300 Ma only) are plotted as solid-dark-gray kernel density estimates for comparison with detrital samples. The full range of observed ages from 0–3000 Ma is shown in the left column, and 0–300 Ma ages are shown in detail in the right column. Pie charts show the fraction of zircons <300 Ma. (B) Locations for the bedrock (black dots) and detrital (white dots, with contributing drainage area in gray) samples used in the data compilation in (A).



A
All zircons
Zircons < 300 Ma
1. Himalayan sources
2. Gangdese sources
3. Bomi-Chayu sources
4. Yarlung-Siang samples
Namche Barwa cirque M
(Lang et al., 2013)
n = 129
<300 Ma
>300 Ma zircons
38/129
Himalayan bedrock compilation
n = 1175
n = 38
Subansiri U
(Cina et al., 2009)
n = 101
5/101
n = 5
Kameng K
(Cina et al., 2009)
n = 103
2/103
n = 2
Layue Qu Q
(Zhang et al., 2012)
n = 89
42/89
overlap
Gangdese bedrock compilation
n = 1296
n = 42
Nyingoh N
(Zhang et al., 2012)
n = 91
15/91
n = 15
Langxian X
(Zhang et al., 2012)
n = 84
48/84
n = 48
Yigong I
(Lang et al., 2013)
n = 116
94/116
Gangdese overlap?
Bomi-Chayu bedrock compilation
n = 593
n = 94
Parlung P
(Zhang et al., 2012)
n = 94
77/94
n = 77
Lohit L
(Cina et al., 2009)
n = 141
53/141
Lohit plutonic suite?
n = 53
Yarlung (Gyaca) G
(Zhang et al., 2012)
n = 79
44/79
n = 44
Yarlung (Pai) Y
(Stewart et al., 2008)
n = 163
90/163
n = 90
Siang S1 S2 S3
(Lang et al., 2013)
n = 219
103/219
n = 103
U-Pb age (Ma)
U-Pb age (Ma)

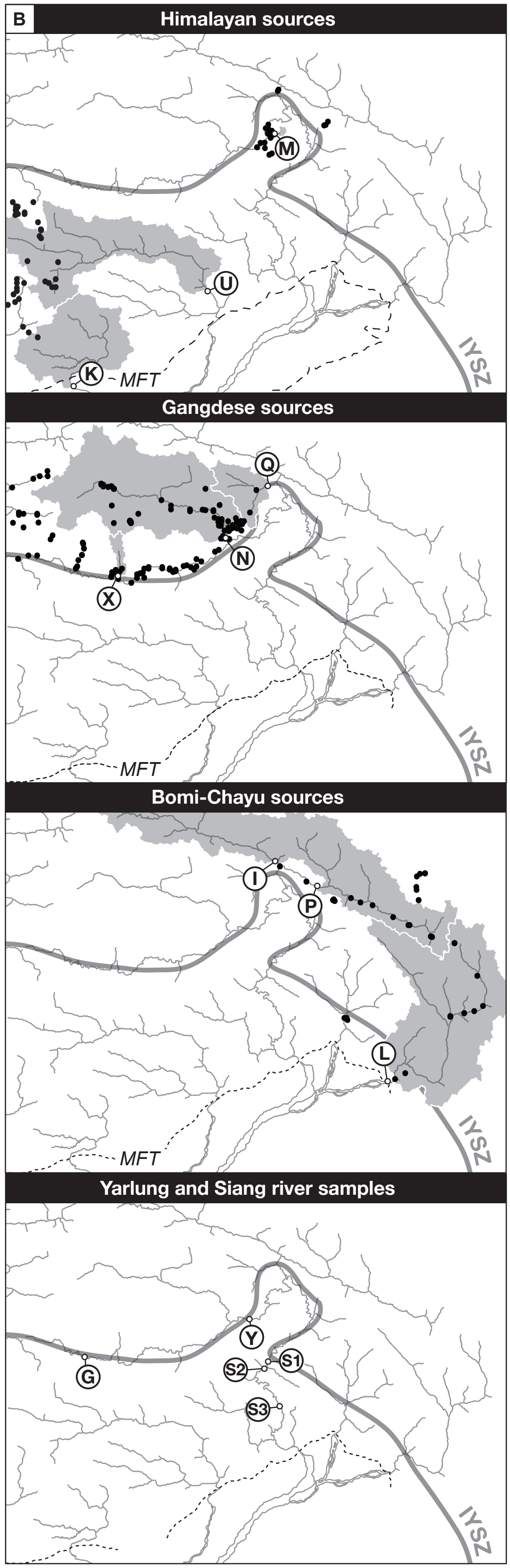
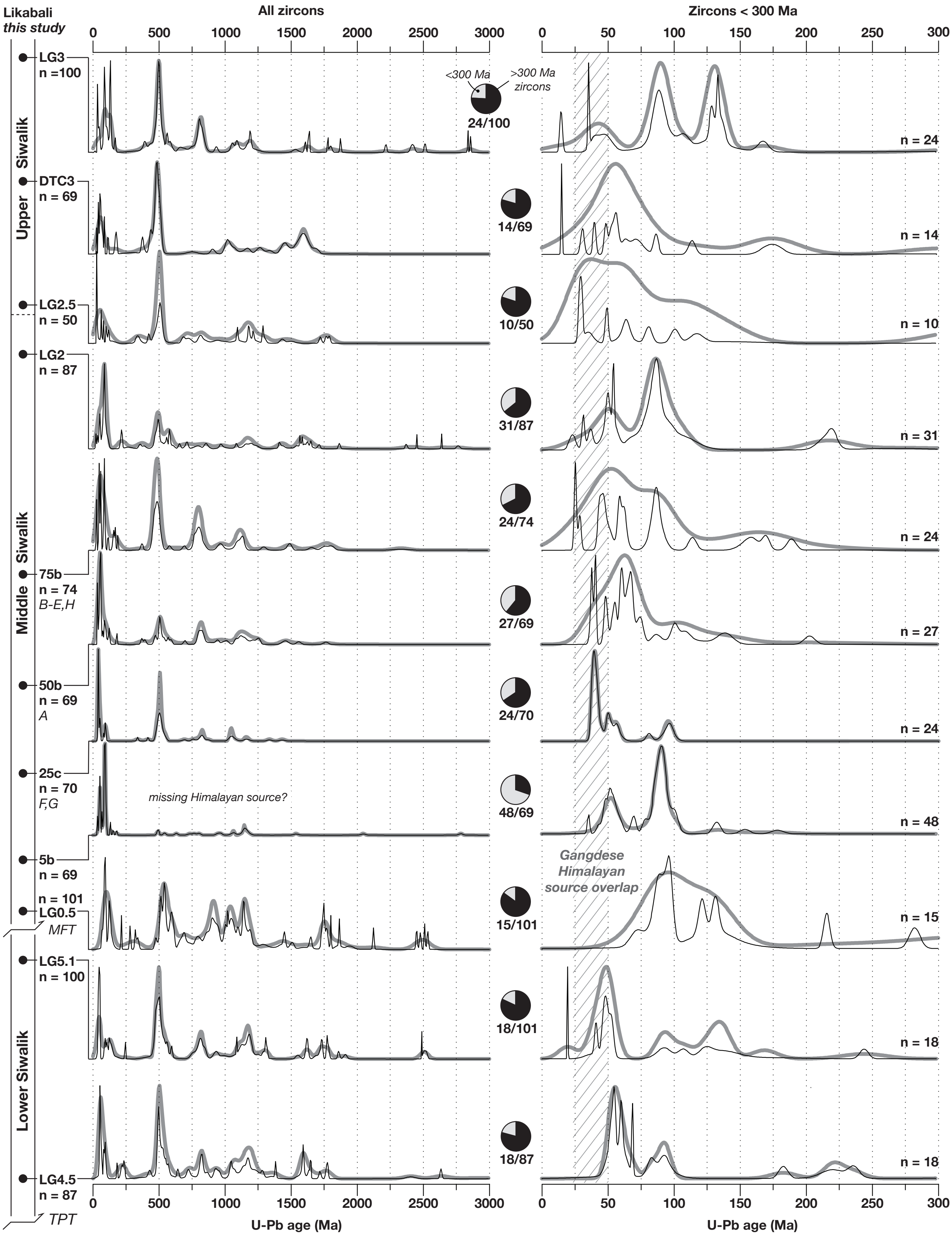
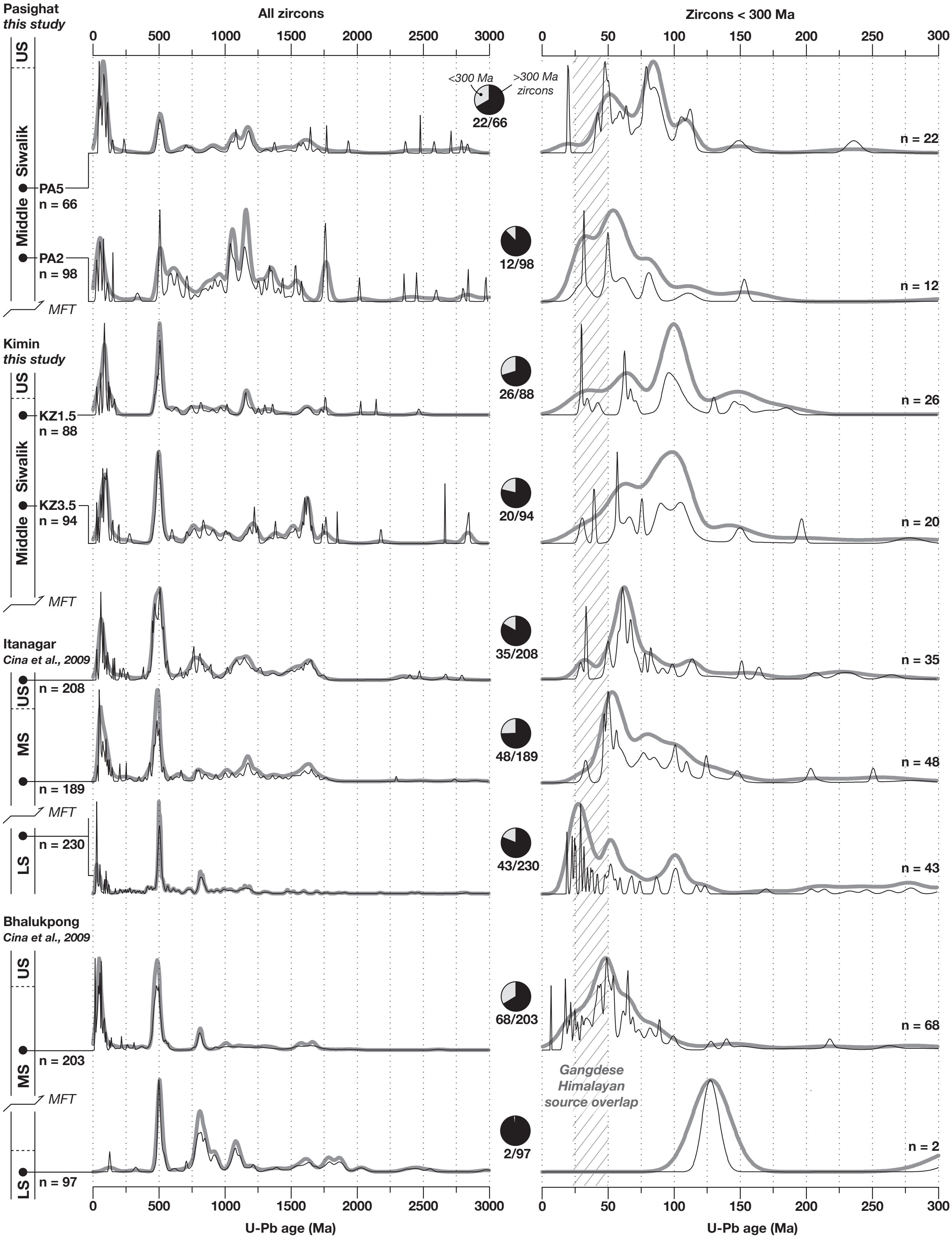

B
Himalayan sources
M
U
K
MFT
IYSZ
Gangdese sources
Q
N
X
MFT
IYSZ
Bomi-Chayu sources
I
P
L
MFT
IYSZ
Yarlung and Siang river samples
Y
G
S2
S1
S3
IYSZ

Figure 2.9.4 New detrital geochronology of Siwalik units

Detrital zircon U–Pb data from Siwalik units sampled at the three new locations shown in Figure 1 and data from previously sampled sections at Bhalukpong and Itanagar (Cina et al., 2009) for comparison. Samples are plotted at their approximate stratigraphic position. Paleogene–Late Cretaceous ages characteristic of Gangdese sources west of the Namche Barwa massif are observed in all samples with the exception of the Lower Siwalik unit at Bhalukpong (Cina et al., 2009). Pie charts and age spectra are plotted in the same manner as Figure 3.



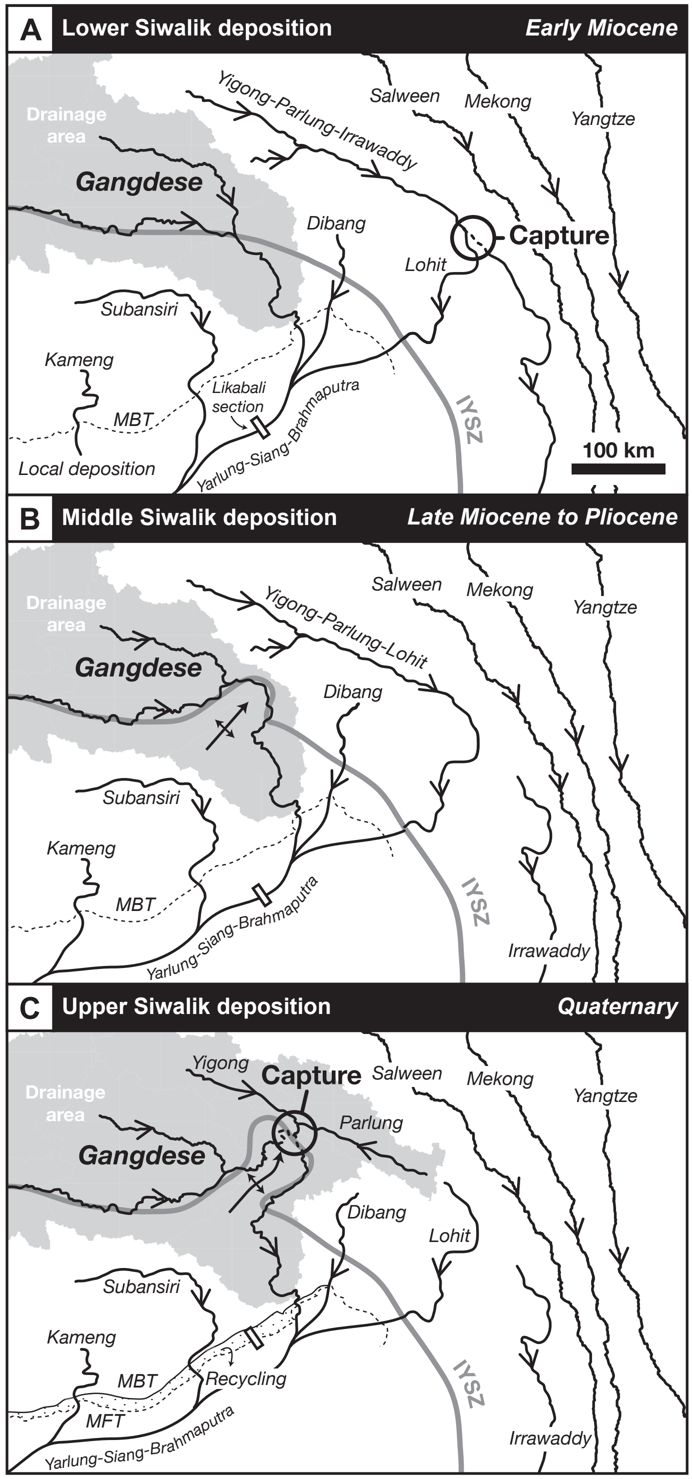
Likabali
this study
All zircons
Zircons < 300 Ma
Upper Siwalik
Middle Siwalik
Lower Siwalik
LG3
n =100
DTC3
n = 69
LG2.5
n = 50
LG2
n = 87
75b
n = 74
B-E,H
50b
n = 69
A
25c
n = 70
F,G
5b
n = 69
n = 101
LG0.5
MFT
LG5.1
n = 100
LG4.5
n = 87
TPT
<300 Ma
>300 Ma zircons
24/100
14/69
10/50
31/87
24/74
27/69
24/70
48/69
15/101
18/101
18/87
missing Himalayan source?
Gangdese Himalayan source overlap
n = 24
n = 14
n = 10
n = 31
n = 24
n = 27
n = 24
n = 48
n = 15
n = 18
n = 18
U-Pb age (Ma)
U-Pb age (Ma)



Pasighat
this study
All zircons
Zircons < 300 Ma
<300 Ma
>300 Ma zircons
22/66
n = 22
US
Middle Siwalik
PA5
n = 66
PA2
n = 98
12/98
n = 12
MFT
Kimin
this study
KZ1.5
n = 88
26/88
n = 26
KZ3.5
n = 94
20/94
n = 20
Itanagar
Cina et al., 2009
n = 208
35/208
n = 35
MS
n = 189
48/189
n = 48
LS
n = 230
43/230
n = 43
Bhalukpong
Cina et al., 2009
n = 203
68/203
n = 68
Gangdese Himalayan source overlap
2/97
n = 2
n = 97
U-Pb age (Ma)

Figure 2.9.5 Proposed drainage evolution

Proposed drainage evolution of rivers flowing into the eastern Himalayan foreland basin. (A) Connection of the Yarlung–Siang–Brahmaputra River was established during or prior to deposition of the Lower Siwalik unit in the Early Miocene. The ancestral Yarlung River may have followed the IYSZ into the basin as an ancestral Yigong–Parlung River connected to the Irrawaddy system prior to capture by the Lohit River at ~18 Ma (Robinson et al., 2013). (B) Uplift of the Namche Barwa massif began to warp the IYSZ into a U-shape, steepening the Yarlung–Siang–Brahmaputra where it crosses the structure and initiating rapid exhumation of the massif. (C) Lateral propagation of the massif eventually led to capture of the Yigong and Parlung Rivers, reversing flow of the Parlung. The timing of this event remains poorly constrained but may have been influenced by glacial activity in the Quaternary Period.



A
Lower Siwalik deposition
Early Miocene
Drainage area
Gangdese
Yigong-Parlung-Irrawaddy
Salween
Mekong
Yangtze
Dibang
Capture
Lohit
Subansiri
Kameng
MBT
Likabali section
Yarlung-Siang-Brahmaputra
IYSZ
Local deposition
100 km
B
Middle Siwalik deposition
Late Miocene to Pliocene
Drainage area
Gangdese
Yigong-Parlung-Lohit
Salween
Mekong
Yangtze
Dibang
Subansiri
Kameng
MBT
Yarlung-Siang-Brahmaputra
IYSZ
Irrawaddy
C
Upper Siwalik deposition
Quaternary
Drainage area
Gangdese
Yigong
Capture
Parlung
Salween
Mekong
Yangtze
Dibang
Lohit
Subansiri
Kameng
MBT
Recycling
MFT
Yarlung-Siang-Brahmaputra
IYSZ
Irrawaddy

2.10 Tables

2.10.1 Detrital zircon (U-Th)/Pb analyses

TABLE A1. Details of detrital zircon (U-Th)/Pb analyses (1 sigma uncertainties reported). Analyses conducted at University of Arizona LaserChron Center.

NORTHING	EASTING	LOCATION	UNIT	SAMPLE ID	GRAIN	GRAIN ID	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios							Apparent ages (Ma)								
										206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Preferred age (Ma)	± (Ma)	Conc (%)
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	1	PA2-01	130	124661	1.3	12.3537	0.8	2.0639	3.8	0.1849	3.7	0.97	1093.8	37.0	1136.9	25.8	1220.2	16.7	1220.2	16.7	90
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	2	PA2-02	191	80606	1.1	17.3402	1.3	0.6532	1.6	0.0822	0.9	0.55	509.0	4.3	510.5	6.3	517.2	28.9	509.0	4.3	98
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	3	PA2-03	187	76510	2.0	14.2145	0.7	1.5092	1.5	0.1556	1.4	0.90	932.2	11.9	934.1	9.3	938.6	13.5	932.2	11.9	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	4	PA2-04	173	327637	1.4	13.2628	0.7	1.8831	1.5	0.1811	1.3	0.88	1073.2	12.8	1075.2	9.7	1079.2	13.9	1079.2	13.9	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	5	PA2-05	186	150914	2.1	10.2074	0.3	3.7798	1.3	0.2798	1.3	0.97	1590.4	18.1	1588.5	10.7	1585.8	6.4	1585.8	6.4	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	6	PA2-06	150	134297	1.0	13.0266	1.0	1.9882	1.2	0.1878	0.7	0.55	1109.7	6.9	1111.5	8.3	1115.1	20.4	1115.1	20.4	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	7	PA2-07	107	104705	1.0	12.7920	0.7	2.0940	2.0	0.1943	1.9	0.94	1144.5	19.7	1146.9	13.8	1151.3	13.8	1151.3	13.8	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	8	PA2-08	184	73658	1.5	16.4448	0.8	0.8938	2.2	0.1066	2.0	0.94	653.0	12.7	648.4	10.4	632.5	16.2	653.0	12.7	103
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	9	PA2-09	125	147847	0.8	8.0141	0.3	6.1701	2.0	0.3586	2.0	0.99	1975.7	34.4	2000.2	17.8	2025.7	5.0	2025.7	5.0	98
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	10	PA2-10	522	207919	5.2	11.6063	0.3	2.7895	2.1	0.2348	2.1	0.99	1359.7	25.4	1352.7	15.6	1341.8	6.0	1341.8	6.0	101
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	11	PA2-12	166	263641	1.2	9.2759	0.3	4.6752	1.1	0.3145	1.0	0.95	1762.9	15.6	1762.8	9.0	1762.6	6.3	1762.6	6.3	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	12	PA2-13	34	15534	0.8	16.7046	6.9	0.8192	7.2	0.0992	2.0	0.28	610.0	11.7	607.6	33.0	598.7	150.1	610.0	11.7	102
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	13	PA2-16	193	80675	1.2	12.5509	0.7	2.1881	1.4	0.1992	1.1	0.84	1170.9	12.2	1177.3	9.4	1189.0	14.3	1189.0	14.3	98
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	14	PA2-17	41	41390	0.7	11.0300	2.6	3.1865	6.2	0.2549	5.6	0.91	1463.7	73.6	1453.9	47.7	1439.5	48.7	1439.5	48.7	102
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	15	PA2-18	146	437073	2.6	6.2328	0.2	10.0182	1.8	0.4529	1.8	0.99	2408.0	36.3	2436.5	16.8	2460.3	4.1	2460.3	4.1	98
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	16	PA2-19	233	29870	0.8	17.4200	2.0	0.6515	2.5	0.0823	1.6	0.62	509.9	7.6	509.4	10.0	507.1	43.1	509.9	7.6	101
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	17	PA2-20	239	444663	1.7	12.1093	0.5	2.4853	1.9	0.2183	1.9	0.97	1272.7	21.6	1267.8	13.9	1259.4	8.9	1259.4	8.9	101
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	18	PA2-21	111	75819	2.4	15.5528	1.3	1.1351	2.8	0.1280	2.4	0.89	776.7	17.9	770.2	14.8	751.4	26.8	776.7	17.9	103
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	19	PA2-22	193	89125	1.2	13.9455	0.8	1.6092	1.6	0.1628	1.4	0.88	972.1	13.0	973.8	10.2	977.7	15.5	972.1	13.0	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	20	PA2-23	80	63375	2.8	13.7896	1.7	1.7242	2.3	0.1724	1.6	0.68	1025.5	15.0	1017.6	14.9	1000.5	34.3	1000.5	34.3	102
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	21	PA2-24	73	111934	0.6	17.5870	3.5	0.6343	3.9	0.0809	1.6	0.41	501.5	7.7	498.7	15.2	486.1	77.7	501.5	7.7	103
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	22	PA2-25	332	253543	5.8	11.0149	0.3	3.1371	2.9	0.2506	2.9	0.99	1441.6	36.9	1441.8	22.1	1442.1	5.6	1442.1	5.6	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	23	PA2-26	39	15597	0.5	16.9969	7.1	0.7303	7.5	0.0900	2.5	0.33	555.7	13.1	556.7	32.2	561.0	154.7	555.7	13.1	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	24	PA2-27	402	297202	1.5	15.0160	0.4	1.2573	1.9	0.1369	1.8	0.97	827.3	14.4	826.7	10.8	825.2	9.3	827.3	14.4	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	25	PA2-28	546	396911	2.6	15.7506	0.5	1.0211	1.4	0.1166	1.3	0.94	711.2	9.0	714.5	7.3	724.7	9.9	711.2	9.0	98
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	26	PA2-29	194	349703	1.5	10.4510	0.3	3.5882	0.8	0.2720	0.7	0.93	1550.8	10.2	1546.9	6.4	1541.6	5.6	1541.6	5.6	101
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	27	PA2-30	119	53420	0.4	16.8311	3.3	0.7658	3.5	0.0935	1.3	0.37	576.1	7.3	577.3	15.6	582.3	71.5	576.1	7.3	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	28	PA2-31	296	1000	0.7	18.5591	13.7	0.0578	13.9	0.0078	2.5	0.18	49.9	1.2	57.0	7.7	366.1	309.8	49.9	1.2	NA
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	29	PA2-32	145	31331	0.9	17.4288	3.8	0.6592	4.3	0.0833	2.0	0.46	516.0	9.7	514.1	17.2	506.0	83.0	516.0	9.7	102
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	30	PA2-33	100	242507	2.0	9.2356	0.4	4.7283	1.6	0.3167	1.6	0.97	1773.7	24.7	1772.3	13.8	1770.6	7.6	1770.6	7.6	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	31	PA2-34	78	60727	1.2	10.3743	0.9	3.3002	4.9	0.2483	4.8	0.98	1429.8	61.1	1481.1	37.9	1555.4	17.7	1555.4	17.7	92
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	32	PA2-35	55	62405	0.8	14.4160	2.5	1.4227	2.7	0.1487	1.2	0.43	893.9	9.7	898.5	16.3	909.7	50.9	893.9	9.7	98
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	33	PA2-36	217	67101	2.2	9.2287	0.3	4.5382	1.3	0.3038	1.3	0.97	1709.9	19.4	1738.0	11.1	1772.0	5.5	1772.0	5.5	96
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	34	PA2-37	35	36773	0.5	12.7436	3.8	2.2198	4.3	0.2052	2.0	0.48	1203.0	22.4	1187.3	30.0	1158.8	74.7	1158.8	74.7	104
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	35	PA2-38	91	5057	1.0	30.8173	75.0	0.0371	75.7	0.0083	10.1	0.13	53.2	5.4	37.0	27.5	-924.1	2538.2	53.2	5.4	NA
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	36	PA2-39	52	53538	1.8	13.3326	2.1	1.8560	2.5	0.1795	1.4	0.54	1064.1	13.5	1065.6	16.8	1068.6	42.9	1068.6	42.9	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	37	PA2-40	186	64321	0.6	17.4656	2.0	0.6427	3.2	0.0814	2.5	0.77	504.6	11.9	504.0	12.6	501.4	44.6	504.6	11.9	101
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	38	PA2-41	87	104742	1.1	12.9634	1.4	2.0167	2.3	0.1896	1.9	0.80	1119.2	19.2	1121.1	15.8	1124.8	27.9	1124.8	27.9	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	39	PA2-42	818	142182	1.4	20.0973	1.9	0.1652	2.4	0.0241	1.5	0.63	153.4	2.3	155.2	3.5	183.7	43.9	153.4	2.3	NA
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	40	PA2-43	580	584599	1.0	11.1948	0.6	2.9143	3.5	0.2366	3.5	0.98	1369.1	42.6	1385.6	26.5	1411.2	12.3	1411.2	12.3	97
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	41	PA2-44	168	150439	4.3	14.3627	1.6	1.5463	3.3	0.1611	2.9	0.88	962.7	25.6	949.0	20.1	917.3	31.9	962.7	25.6	105
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	42	PA2-45	105	11473	0.8	21.0391	13.3	0.1135	14.4	0.0173	5.6	0.39	110.7	6.2	109.2	15.0	75.9	317.4	110.7	6.2	NA
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	43	PA2-46	69	193007	1.1	4.9239	0.2	15.2408	2.5	0.5443	2.5	1.00	2801.3	56.5	2830.4	23.7	2851.2	2.9	2851.2	2.9	98
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	44	PA2-47	220	275109	1.1	6.5894	0.3	8.5839	4.7	0.4102	4.7	1.00	2216.0	87.4	2294.8	42.5	2365.8	4.3	2365.8	4.3	94
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	45	PA2-48	375	420482	7.4	13.4954	0.4	1.7893	3.3	0.1751	3.3	0.99	1040.3	31.5	1041.6	21.6	1044.2	9.0	1044.2	9.0	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	46	PA2-49	1650	2057	0.4	16.5227	26.5	0.0411	32.4	0.0049	18.7	0.58	31.7	5.9	40.9	13.0	622.3	580.3	31.7	5.9	NA
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	47	PA2-50	70	1535	0.9	9.2331	195.0	0.0699	195.8	0.0047	17.2	0.09	30.1	5.2	68.6	130.6	1771.1	288.8	30.1	5.2	NA
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	48	PA2-51	63	235293	1.5	11.4945	1.6	2.8320	3.1	0.2361	2.6	0.85	1366.3	32.3	1364.0	23.0	1360.4	30.7	1360.4	30.7	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	49	PA2-52	123	70039	2.5	9.2972	0.6	4.7014	1.0	0.3170	0.9	0.82	1775.1	13.2	1767.5	8.8	1758.5	11.0	1758.5	11.0	101
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	50	PA2-53	187	50957	1.3	12.8788	0.9	2.0033	2.2	0.1871	1.9	0.90	1105.8	19.7	1116.6	14.6	1137.9	18.6	1137.9	18.6	97
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	51	PA2-54	277	657063	6.0	9.2721	0.3	4.6213	1.2	0.3108	1.2	0.97	1744.5	17.6	1753.1	9.9	1763.4	5.1	1763.4	5.1	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	52	PA2-55	198	213917	1.2	13.4642	0.9	1.7119	3.1	0.1672	3.0	0.95	996.5	27.7	1013.0	20.1	1048.9	19.1	1048.9	19.1	95
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	53	PA2-56	114	161943	1.0	12.7299	0.9	2.1191	1.7	0.1956	1.4	0.86	1151.9	14.9	1155.0	11.4	1160.9	16.9	1160.9	16.9	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	54	PA2-57	126	5239	0.8	18.3267	21.5	0.0721	23.3	0.0096	9.1	0.39	61.4	5.5	70.6	15.9	394.4	486.8	61.4	5.5	NA
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	55	PA2-58	85	70540	1.0	14.2077	2.0	1.3859	2.7	0.1428	1.9	0.69	860.5	15.1	883.0	16.0	939.6	40.3	860.5	15.1	92
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	56	PA2-59	1307	263513	19.6	18.5712	0.6	0.4012	4.3	0.0540	4.3	0.99	339.3	14.2	342.6	12.6	364.6	13.5	339.3	14.2	NA
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	57	PA2-60	260	62295	2.3	13.9043	1.2	1.4202	3.5	0.1432	3.3	0.94	862.8	26.6	897.5	20.9	983.7	24.0	862.8	26.6	88
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	58	PA2-61	60	181436	1.7	4.2236	0.4	20.1638	1.2	0.6177	1.2	0.96	3100.7	28.6	3099.2	11.7	3098.3	5.6	3098.3	5.6	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	59	PA2-62	88	115190	1.9	9.2381	0.7	4.6669	1.3	0.3127	1.1	0.86	1753.9	17.5	1761.3	11.1	1770.1	12.5	1770.1	12.5	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	60	PA2-63	138	64872	1.6	15.8477	1.1	1.0278	1.7	0.1181	1.3	0.76	719.8	8.7	717.8	8.7	711.6	23.5	719.8	8.7	101
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	61	PA2-64	47	25412	0.6	16.8746	7.3	0.6846	7.5	0.0838	1.9	0.25	518.7	9.5	529.5	31.0	576.7	158.2	518.7	9.5	90
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	62	PA2-65	44	47920	1.5	5.0356	0.5	12.5096	2.6	0.4569	2.5	0.98	2425.7	51.2	2643.5	24.4	2814.6	8.8	2814.6	8.8	86
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	63	PA2-67	177	396240	2.5	5.7024	0.6	10.3813	2.0	0.4293	1.9	0.95	2302.8	37.0	2469.4	18.6	2609.5	10.2	2609.5	10.2	88
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	64	PA2-68	141	159218	2.5	10.6778	1.7	2.9462	2.3	0.2282	1.5	0.67	1324.9	18.3	1393.9	17.2	1501.1	31.7	1501.1	31.7	88
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	65	PA2-69	2490	30975	21.2	21.6372	2.7	0.0315	3.6	0.0049	2.3	0.65	31.8	0.7	31.5	1.1	9.0	65.9	31.8	0.7	NA
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	66	PA2-70	339	294369	3.2	13.5160	0.4	1.7854	2.1	0.1750	2.1	0.98	1039.7	20.1	1040.2	13.9	1041.1	8.7	1041.1	8.7	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	67	PA2-72	319	19374	2.0	19.5774	5.6	0.0687	8.9	0.0098	6.8	0.77	62.6	4.3	67.5	5.8	244.4	129.7	62.6	4.3	NA
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	68	PA2-73	68	53977	0.6	12.6367	2.2	2.1273	4.7	0.1950	4.1	0.88	1148.2	43.3	1157.7	32.2	1175.5	43.3	1175.5	43.3	98
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	69	PA2-74	90	58890	0.5	16.8142	2.4	0.7885	3.1	0.0962	2.0	0.63	591.9	11.2	590.3	14.1	584.4	52.9	591.9	11.2	101
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	70	PA2-76	105	209319	1.5	11.6322	0.8	2.7070	2.2	0.2284	2.0	0.93	1326.0	24.4	1330.4	16.2	1337.4	15.5	1337.4	15.5	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	71	PA2-77	75	67518	1.6	11.4871	1.0	2.8346	1.8	0.2362	1.5	0.83	1366.7	18.4	1364.7	13.6	1361.7	19.5	1361.7	19.5	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	72	PA2-78	121	5881	1.0	22.6654	31.5	0.0472	32.1	0.0078	6.0	0.19	49.9	3.0	46.9	14.7	-104.0	792.5	49.9	3.0	NA
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	73	PA2-79	55	100858	1.6	14.2750	2.1	1.4843	2.4	0.1537	1.2	0.51	921.5	10.7	924.0	14.8	929.9	42.9	921.5	10.7	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	74	PA2-80	97	94675	1.2	12.7542	1.3	2.0754	1.5	0.1920	0.8	0.55	1132.1	8.7	1140.7	10.3	1157.2	25.0	1157.2	25.0	98
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	75	PA2-81	126	45361	0.9	16.4513	2.1	0.8720	2.5	0.1040	1.5	0.57	638.1	8.8	636.7	12.0	631.7	44.9	638.1	8.8	101
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	76	PA2-82	119	15348	1.8	22.1270	15.2	0.0777	15.6	0.0125	3.6	0.23	79.9	2.8	76.0	11.5	-45.2	371.9	79.9	2.8	NA
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	77	PA2-83	339	165186	1.6	17.3645	1.3	0.6532	2.1	0.0823	1.6	0.76	509.6	7.7	510.4	8.2	514.1	29.1	509.6	7.7	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	78	PA2-84	106	140030	1.6	12.0403	3.0	2.0101	10.8	0.1755	10.3	0.96	1042.5	99.5	1118.9	73.2	1270.5	59.1	1270.5	59.1	82
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	79	PA2-85	189	142730	0.5	12.7914	0.6	2.0911	1.4	0.1940	1.2	0.88	1143.0	12.5	1145.9	9.3	1151.4	12.8	1151.4	12.8	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	80	PA2-87	83	119528	0.3	12.6888	0.8	2.1587	1.2	0.1987	1.0	0.78	1168.1	10.3	1167.9	8.5	1167.3	15.2	1167.3	15.2	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	81	PA2-88	69	48481	1.3	16.1896	4.9	0.8793	5.5	0.1032	2.4	0.44	633.4	14.6	640.6	26.0	666.1	105.0	633.4	14.6	95
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	82	PA2-89	71	80169	0.8	12.6453	1.2	2.1539	2.0	0.1975	1.6	0.80	1162.1	17.0	1166.3	13.9	1174.2	24.1	1174.2	24.1	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	83	PA2-90	86	85873	0.6	12.0651	2.6	2.0941	3.8	0.1832	2.8	0.74	1084.7	28.3	1146.9	26.3	1266.5	49.9	1266.5	49.9	86
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	84	PA2-91	453	367012	5.2	15.2093	2.0	1.0008	5.8	0.1104	5.5	0.94	675.0	35.0	704.2	29.5	798.4	42.0	675.0	35.0	85
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	85	PA2-92	89	112142	0.8	12.7493	2.0	2.0118	10.0	0.1860	9.8	0.98	1099.8	98.7	1119.5	67.7	1157.9	40.2	1157.9	40.2	95
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	86	PA2-93	175	15570	1.1	22.0581	13.0	0.0813	13.7	0.0130	4.2	0.31	83.3	3.5	79.3	10.4	-37.6	316.6	83.3	3.5	NA
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	87	PA2-94	340	298279	4.0	11.4976	0.4	2.4777	3.9	0.2066	3.9	1.00	1210.7	42.6	1265.5	28.1	1359.9	7.0	1359.9	7.0	89
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	88	PA2-95	129	110768	2.7	13.3491	0.9	1.8852	1.6	0.1825	1.3	0.83	1080.7	12.9	1075.9	10.3	1066.1	17.3	1066.1	17.3	101
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	89	PA2-96	94	128737	0.4	13.9383	1.5	1.6049	3.1	0.1622	2.6	0.87	969.2	23.8	972.1	19.1	978.7	30.8	969.2	23.8	99

28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	90	PA2-97	105	134626	1.0	13.4006	0.9	1.7295	2.6	0.1681	2.4	0.94	1001.6	22.3	1019.6	16.5	1058.4	17.7	1058.4	17.7	95
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	91	PA2-98	42	26360	1.0	12.4966	3.6	2.2450	4.1	0.2035	1.9	0.46	1194.0	20.6	1195.2	28.8	1197.5	71.8	1197.5	71.8	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	92	PA2-99	152	163658	2.6	11.8337	0.4	2.5434	1.9	0.2183	1.9	0.98	1272.8	21.6	1284.6	13.9	1304.2	7.2	1304.2	7.2	98
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	93	PA2-100	116	190539	2.0	4.5305	0.3	17.2259	2.2	0.5660	2.2	0.99	2891.5	50.1	2947.5	20.8	2986.0	4.3	2986.0	4.3	97
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	94	PA2-101	221	142660	0.7	13.4689	0.8	1.8364	2.1	0.1794	2.0	0.93	1063.6	19.3	1058.6	13.9	1048.2	15.7	1048.2	15.7	101
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	95	PA2-102	159	160845	1.0	13.4174	0.9	1.8187	1.8	0.1770	1.5	0.87	1050.5	14.8	1052.2	11.5	1055.9	17.5	1055.9	17.5	99
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	96	PA2-103	97	59741	0.7	16.9523	2.0	0.7853	2.6	0.0966	1.6	0.63	594.2	9.3	588.5	11.6	566.7	44.1	594.2	9.3	105
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	97	PA2-104	117	154732	2.3	13.2496	0.6	1.9032	4.1	0.1829	4.0	0.99	1082.7	40.2	1082.2	27.2	1081.2	12.9	1081.2	12.9	100
28.13025	95.301267	PASIGHAT	MIDDLE SIWALIK	PA2	98	PA2-105	121	144382	1.3	10.4727	0.6	3.5572	1.3	0.2702	1.2	0.90	1541.7	16.0	1540.0	10.3	1537.7	10.4	1537.7	10.4	100
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	1	PA5-1	256	16618	1.4	25.9649	20.9	0.0393	21.1	0.0074	2.5	0.12	47.5	1.2	39.1	8.1	-449.7	556.3	47.5	1.2	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	2	PA5-2	65	105753	1.2	5.0913	0.4	13.5576	2.5	0.5006	2.4	0.99	2616.5	52.7	2719.3	23.4	2796.6	5.8	2796.6	5.8	94
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	3	PA5-3	351	20991	1.4	20.0580	15.3	0.0547	15.5	0.0080	2.4	0.16	51.1	1.2	54.1	8.2	188.2	359.0	51.1	1.2	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	4	PA5-4	130	132727	1.1	11.7592	1.2	2.5764	2.6	0.2197	2.3	0.89	1280.5	26.4	1294.0	18.7	1316.4	22.6	1316.4	22.6	97
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	5	PA5-5	39	2520	1.3	19.2189	31.0	0.0990	37.1	0.0138	20.5	0.55	88.4	18.0	95.9	34.0	286.8	723.5	88.4	18.0	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	6	PA5-6	362	16920	2.6	20.2133	5.9	0.0857	8.9	0.0126	6.7	0.75	80.5	5.3	83.5	7.2	170.3	138.7	80.5	5.3	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	7	PA5-7	289	87816	1.7	17.3302	1.8	0.6309	2.9	0.0793	2.3	0.78	491.9	10.8	496.6	11.5	518.5	40.4	491.9	10.8	95
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	8	PA5-8	255	362609	1.0	9.8730	0.5	4.0026	2.1	0.2866	2.0	0.97	1624.6	29.2	1634.7	17.1	1647.8	9.9	1647.8	9.9	99
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	9	PA5-9	392	24056	1.0	24.9900	7.2	0.0418	7.8	0.0076	3.0	0.39	48.6	1.5	41.5	3.2	-349.9	185.2	48.6	1.5	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	10	PA5-10	61	257607	1.3	4.9486	0.5	14.6472	1.7	0.5257	1.6	0.95	2723.3	36.2	2792.6	16.3	2843.0	8.7	2843.0	8.7	96
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	11	PA5-11	260	365197	1.6	10.7838	1.9	3.0670	4.6	0.2399	4.2	0.91	1386.0	52.3	1424.5	35.4	1482.4	36.6	1482.4	36.6	93
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	12	PA5-12	339	89428	1.7	11.3909	0.4	2.8637	2.6	0.2366	2.6	0.99	1368.9	32.0	1372.4	19.8	1377.9	7.8	1377.9	7.8	99
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	13	PA5-14	347	372193	1.2	13.2453	0.6	1.9166	2.0	0.1841	1.9	0.95	1089.4	18.6	1086.9	13.1	1081.8	12.8	1081.8	12.8	101
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	14	PA5-15	431	45808	0.5	20.4250	5.0	0.1193	5.3	0.0177	1.8	0.35	113.0	2.1	114.5	5.7	145.9	116.6	113.0	2.1	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	15	PA5-16	222	294341	1.7	9.8589	0.2	4.0145	1.9	0.2871	1.9	0.99	1626.8	27.3	1637.1	15.5	1650.5	4.5	1650.5	4.5	99
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	16	PA5-17	392	168915	0.8	17.2967	1.2	0.6548	3.4	0.0821	3.1	0.93	508.9	15.2	511.4	13.5	522.7	27.4	508.9	15.2	97
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	17	PA5-18	188	7413	1.2	21.6704	14.6	0.1052	14.8	0.0165	2.8	0.19	105.7	2.9	101.6	14.3	5.2	352.3	105.7	2.9	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	18	PA5-19	150	247777	1.0	12.6754	1.0	2.1228	2.0	0.1951	1.7	0.86	1149.2	18.3	1156.2	13.9	1169.4	20.2	1169.4	20.2	98
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	19	PA5-20	221	354517	3.5	9.2196	0.2	4.6550	1.3	0.3113	1.3	0.99	1746.9	19.8	1759.2	10.9	1773.8	2.8	1773.8	2.8	98
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	20	PA5-21	201	434159	0.7	6.1442	0.1	10.2232	1.7	0.4556	1.7	1.00	2420.0	33.4	2455.2	15.3	2484.5	1.7	2484.5	1.7	97
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	21	PA5-22	65	3469	0.9	21.1949	40.9	0.0928	41.6	0.0143	7.9	0.19	91.3	7.1	90.1	35.9	58.4	1012.5	91.3	7.1	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	22	PA5-23	164	136968	1.1	13.2310	1.2	1.8347	4.0	0.1761	3.8	0.95	1045.4	36.4	1058.0	26.1	1084.0	24.5	1084.0	24.5	96
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	23	PA5-24	215	180311	3.4	12.6086	0.6	2.1169	1.4	0.1936	1.3	0.89	1140.7	13.2	1154.3	9.8	1179.9	12.7	1179.9	12.7	97
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	24	PA5-25	125	77289	1.0	15.9487	2.1	1.0030	2.8	0.1160	1.8	0.65	707.6	12.1	705.3	14.2	698.1	45.3	707.6	12.1	101
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	25	PA5-26	104	70780	0.8	10.1606	0.7	3.7743	2.9	0.2781	2.8	0.97	1582.0	39.6	1587.3	23.3	1594.4	12.6	1594.4	12.6	99
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	26	PA5-27	98	70283	1.6	12.4539	1.2	2.2153	4.0	0.2001	3.8	0.96	1175.8	41.2	1185.9	28.0	1204.2	22.9	1204.2	22.9	98
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	27	PA5-28	101	6650	1.1	22.4696	33.6	0.0678	34.0	0.0111	5.3	0.16	70.9	3.8	66.6	21.9	-82.7	843.4	70.9	3.8	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	28	PA5-29	115	2908	0.9	21.2562	22.5	0.0837	23.1	0.0129	4.9	0.21	82.6	4.0	81.6	18.1	51.5	544.0	82.6	4.0	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	29	PA5-30	131	5443	1.5	19.0835	33.3	0.0673	33.4	0.0093	3.1	0.09	59.7	1.8	66.1	21.4	303.0	777.8	59.7	1.8	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	30	PA5-31	354	559863	9.1	8.4124	0.3	4.2548	3.4	0.2596	3.3	0.99	1487.8	44.4	1684.7	27.7	1939.3	6.2	1939.3	6.2	77
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	31	PA5-34	140	10671	1.9	20.0255	15.1	0.1178	15.7	0.0171	4.6	0.29	109.4	4.9	113.1	16.9	192.1	352.3	109.4	4.9	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	32	PA5-35	369	13614	1.7	21.1325	64.3	0.0205	64.4	0.0031	3.3	0.05	20.2	0.7	20.6	13.1	65.4	1708.8	20.2	0.7	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	33	PA5-36	34	36280	0.5	18.1389	12.3	0.6090	12.7	0.0801	3.0	0.24	496.9	14.6	483.0	48.7	417.5	275.6	496.9	14.6	119
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	34	PA5-37	105	103408	1.3	14.3701	1.3	1.4502	3.5	0.1511	3.2	0.93	907.4	27.3	910.0	20.9	916.3	26.8	907.4	27.3	99
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	35	PA5-38	462	370757	4.2	10.9519	4.6	2.7104	7.5	0.2153	6.0	0.80	1256.9	68.4	1331.3	55.9	1453.0	86.7	1453.0	86.7	87
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	36	PA5-39	654	7375	0.5	21.1267	8.2	0.0432	9.0	0.0066	3.8	0.42	42.5	1.6	42.9	3.8	66.1	195.4	42.5	1.6	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	37	PA5-40	175	26420	1.2	20.3800	3.0	0.2531	3.7	0.0374	2.3	0.61	236.8	5.3	229.1	7.7	151.1	69.4	236.8	5.3	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	38	PA5-41	183	128142	6.1	13.4886	0.8	1.6300	8.1	0.1595	8.0	0.99	953.8	71.3	981.9	50.9	1045.2	16.6	953.8	71.3	91
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	39	PA5-42	135	169659	1.3	12.3655	1.0	2.2987	2.2	0.2062	2.0	0.89	1208.3	21.8	1211.9	15.8	1218.3	20.3	1218.3	20.3	99
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	40	PA5-43	168	112773	0.3	17.1828	2.6	0.6743	5.7	0.0840	5.1	0.89	520.1	25.5	523.3	23.5	537.2	57.1	520.1	25.5	97
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	41	PA5-44	273	330842	2.1	13.2075	0.3	1.8869	2.3	0.1807	2.3	0.99	1071.1	22.4	1076.5	15.2	1087.5	6.5	1087.5	6.5	98
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	42	PA5-45	62	46199	1.3	14.4383	4.7	1.4348	6.5	0.1502	4.5	0.70	902.3	38.1	903.6	38.9	906.5	96.2	902.3	38.1	100
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	43	PA5-46	415	20746	1.5	21.1875	7.2	0.0804	7.4	0.0124	1.9	0.25	79.1	1.5	78.5	5.6	59.3	171.4	79.1	1.5	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	44	PA5-47	128	147787	1.4	12.7268	1.3	2.0993	1.9	0.1938	1.4	0.75	1141.8	14.9	1148.6	13.1	1161.4	25.2	1161.4	25.2	98
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	45	PA5-48	95	17136	1.0	18.1791	22.5	0.1059	22.9	0.0140	4.6	0.20	89.4	4.1	102.2	22.3	412.5	508.3	89.4	4.1	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	46	PA5-49	56	20179	0.7	17.3443	8.3	0.6512	8.5	0.0819	1.7	0.20	507.5	8.4	509.2	33.9	516.7	182.3	507.5	8.4	98
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	47	PA5-50	238	274193	1.7	10.3400	0.5	3.6485	4.5	0.2736	4.5	0.99	1559.1	62.5	1560.2	36.2	1561.6	9.5	1561.6	9.5	100
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	48	PA5-51	115	242058	1.3	5.7720	0.4	10.7288	3.0	0.4491	3.0	0.99	2391.4	59.9	2499.9	28.1	2589.3	6.9	2589.3	6.9	92
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	49	PA5-52	42	3192	1.0	28.0088	106.2	0.0639	106.5	0.0130	7.2	0.07	83.1	5.9	62.9	65.0	-653.6	0.0	83.1	5.9	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	50	PA5-53	234	9690	1.2	23.1743	16.5	0.0512	17.0	0.0086	3.9	0.23	55.3	2.1	50.7	8.4	-158.9	413.0	55.3	2.1	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	51	PA5-54	2508	1170084	6.7	17.3272	0.2	0.6579	3.0	0.0827	3.0	1.00	512.1	14.9	513.3	12.2	518.9	4.6	512.1	14.9	99
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	52	PA5-55	199	236609	1.4	6.5603	0.4	7.1558	5.0	0.3405	5.0	1.00	1888.9	81.5	2131.0	44.5	2373.4	6.6	2373.4	6.6	80
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	53	PA5-56	43	44956	0.9	12.8079	1.4	2.0562	4.2	0.1910	3.9	0.94	1126.8	40.8	1134.4	28.5	1148.9	27.3	1148.9	27.3	98
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	54	PA5-57	549	46901	0.5	20.5530	2.3	0.1575	4.2	0.0235	3.6	0.84	149.6	5.3	148.5	5.8	131.2	54.1	149.6	5.3	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	55	PA5-58	162	343805	1.0	5.3452	0.2	12.5288	4.1	0.4857	4.1	1.00	2552.1	86.5	2644.9	38.7	2716.7	3.3	2716.7	3.3	94
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	56	PA5-59	188	125146	1.0	12.5964	0.7	2.1489	1.9	0.1963	1.8	0.93	1155.5	19.1	1164.7	13.4	1181.8	13.7	1181.8	13.7	98
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	57	PA5-60	154	152147	0.6	13.3740	1.2	1.8304	4.7	0.1775	4.5	0.97	1053.5	43.9	1056.4	30.6	1062.4	23.7	1062.4	23.7	99
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	58	PA5-61	281	99468	1.2	15.7405	0.9	1.0736	2.3	0.1226	2.1	0.92	745.3	14.8	740.5	12.0	726.0	18.8	745.3	14.8	103
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	59	PA5-62	458	199080	0.5	17.3279	0.9	0.6796	2.3	0.0854	2.1	0.91	528.3	10.5	526.5	9.3	518.8	20.3	528.3	10.5	102
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	60	PA5-63	144	187480	2.5	9.5814	1.0	3.9169	3.2	0.2722	3.0	0.94	1551.9	41.0	1617.2	25.5	1703.2	19.2	1703.2	19.2	91
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	61	PA5-64	146	35558	0.5	17.5240	2.9	0.6610	4.1	0.0840	3.0	0.72	520.0	14.8	515.2	16.7	494.0	63.5	520.0	14.8	105
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	62	PA5-65	86	7847	1.1	21.1204	45.7	0.0882	46.0	0.0135	4.9	0.11	86.5	4.2	85.8	37.9	66.8	1143.1	86.5	4.2	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	63	PA5-66	601	19964	1.9	20.3869	3.5	0.0677	4.3	0.0100	2.5	0.59	64.2	1.6	66.5	2.7	150.3	81.1	64.2	1.6	NA
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	64	PA5-68	449	276200	9.8	15.5288	0.9	0.9778	6.2	0.1101	6.2	0.99	673.5	39.5	692.5	31.4	754.7	19.7	673.5	39.5	89
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	65	PA5-69	308	188315	5.8	13.4773	0.6	1.8121	5.0	0.1771	4.9	0.99	1051.2	48.0	1049.8	32.6	1046.9	12.3	1046.9	12.3	100
28.097667	95.271133	PASIGHAT	MIDDLE SIWALIK	PA5	66	PA5-70	95	49896	1.0	10.1223	1.0	3.5358	1.4	0.2596	0.9	0.68	1487.7	12.2	1535.3	10.8	1601.4	18.7	1601.4	18.7	93
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	1	LG3-1	322	6273	3.2	19.0410	11.4	0.1468	11.4	0.0203	1.1	0.10	129.4	1.5	139.1	14.9	308.0	260.2	129.4	1.5	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	2	LG3-2	584	126287	1.6	15.6426	4.2	0.7321	6.1	0.0831	4.5	0.73	514.3	22.1	557.8	26.3	739.2	88.8	514.3	22.1	70
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	3	LG3-3	172	64537	1.3	15.2769	1.9	0.9715	3.1	0.1076	2.4	0.77	659.0	14.9	689.3	15.4	789.1	40.9	659.0	14.9	84
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	4	LG3-4	2087	406358	5.3	17.4145	0.1	0.6017	1.4	0.0760	1.4	1.00	472.2	6.4	478.3	5.4	507.9	2.7	472.2	6.4	93
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	5	LG3-5	846	125636	1.1	17.4074	0.6	0.6415	2.0	0.0810	1.9	0.96	502.0	9.4	503.2	8.0	508.7	12.2	502.0	9.4	99
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	6	LG3-7	849	721761	3.6	14.9437	0.2	1.2447	1.7	0.1349	1.7	0.99	815.8	12.8	821.0	9.5	835.2	4.2	815.8	12.8	98
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	7	LG3-8	2554	545507	63.2	16.7774	0.2	0.7107	1.3	0.0865	1.3	0.99	534.7	6.8	545.1	5.6	589.2	3.6	534.7	6.8	91
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	8	LG3-9	2679	2759419	1.6	14.9407	0.1	1.2611	2.0	0.1366	2.0	1.00	825.7	15.8	828.4	11.5	835.7	2.4	825.7	15.8	99
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	9	LG3-10	1297	42680	1.8	20.8842	7.0	0.0367	7.1	0.0056	1.3	0.18	35.8	0.5	36.6	2.6	93.5	165.6	35.8	0.5	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	10	LG3-11	282	57831	1.3	19.2888	4.6	0.1895	5.2	0.0265	2.4	0.47	168.7	4.0	176.2	8.4	278.5	104.5	168.7	4.0	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	11	LG3-12	2073	141963	0.7	20.5343	0.8	0.1412	1.0	0.0210	0.7	0.68	134.2	0.9	134.1	1.3	133.4	18.0	134.2	0.9	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	12	LG3-13	33	29534	0.8	12.9361	4.4	2.0555	4.5	0.1928	1.2	0.26	1136.8	12.1	1134.1	30.8	1129.0	86.9	1129.0	86.9	101
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	13	LG3-14	194	16737	1.1	22.3497	12.1	0.1328	12.2	0.0215	1.8	0.15	137.3	2.5	126.6	14.6	-69.6	296.3	137.3	2.5	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	14	LG3-15	1066	205571	30.7	18.1285	1.2	0.3924	19.2	0.0516	19.2	1.00	324.3	60.6	336.1	55.0	418.8	25.9	324.3	60.6	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	15	LG3-16	3082	26815	9.4	21.1303	1.8	0.1109	4.0	0.0170	3.6	0.90	108.6	3.9	106.8	4.1	65.7	42.2	108.6	3.9	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	16	LG3-17	331	149428	1.7	17.4901	1.2	0.6649	2.2	0.0843	1.8	0.82	522.0	8.9	517.6	8.7	498.3	26.9	522.0	8.9	105

27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	17	LG3-18	197	66792	2.1	17.5931	1.6	0.6191	2.7	0.0790	2.1	0.80	490.1	10.1	489.3	10.3	485.3	35.1	490.1	10.1	101
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	18	LG3-19	81	4168	1.2	20.3128	36.1	0.0966	36.4	0.0142	4.5	0.12	91.1	4.0	93.6	32.5	158.8	869.7	91.1	4.0	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	19	LG3-20	376	495130	5.6	8.6956	0.2	5.2965	0.7	0.3340	0.7	0.95	1857.9	11.2	1868.3	6.3	1879.9	4.1	1879.9	4.1	99
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	20	LG3-21	24	3927	0.6	12.3505	2.3	2.1330	3.0	0.1911	2.0	0.65	1127.1	20.4	1159.6	20.8	1220.7	44.7	1220.7	44.7	92
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	21	LG3-22	498	153726	1.7	17.4210	1.0	0.6193	1.7	0.0782	1.4	0.82	485.6	6.4	489.4	6.5	507.0	21.0	485.6	6.4	96
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	22	LG3-23	76	103439	0.6	9.0615	0.5	4.3591	3.5	0.2865	3.4	0.99	1623.9	49.1	1704.6	28.6	1805.3	9.1	1805.3	9.1	90
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	23	LG3-24	326	249680	2.0	13.4061	0.5	1.7972	1.5	0.1747	1.5	0.95	1038.2	14.1	1044.4	10.1	1057.6	9.8	1057.6	9.8	98
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	24	LG3-26	833	407160	2.3	16.5358	5.3	0.6066	8.4	0.0728	6.5	0.77	452.7	28.3	481.4	32.1	620.6	114.7	452.7	28.3	73
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	25	LG3-28	76	8072	1.5	29.5922	24.3	0.0666	25.4	0.0143	7.5	0.29	91.4	6.8	65.4	16.1	-807.3	698.3	91.4	6.8	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	26	LG3-29	176	75071	1.8	17.4107	1.6	0.6364	2.2	0.0804	1.5	0.67	498.3	7.1	500.1	8.7	508.3	35.7	498.3	7.1	98
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	27	LG3-30	124	2968	1.5	16.9094	3.9	0.6471	7.6	0.0794	6.6	0.86	492.3	31.2	506.7	30.5	572.2	84.7	492.3	31.2	86
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	28	LG3-31	15	1703	3.1	12.8226	61.4	0.2213	63.1	0.0206	14.5	0.23	131.3	18.9	203.0	116.6	1146.6	1363.5	131.3	18.9	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	29	LG3-32	146	429638	2.5	4.9385	0.1	15.2002	1.0	0.5444	1.0	0.99	2802.0	23.0	2827.9	9.8	2846.4	2.4	2846.4	2.4	98
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	30	LG3-33	124	7756	0.7	21.8200	15.0	0.0878	15.5	0.0139	4.0	0.26	89.0	3.5	85.5	12.7	-11.3	363.6	89.0	3.5	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	31	LG3-34	19	11175	0.9	15.8606	10.8	0.9841	11.2	0.1132	3.0	0.26	691.3	19.4	695.7	56.6	709.9	230.9	691.3	19.4	97
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	32	LG3-35	43	2217	1.1	18.8616	140.2	0.1108	140.5	0.0152	8.6	0.06	97.0	8.3	106.7	143.3	329.6	1112.6	97.0	8.3	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	33	LG3-36	63	5102	1.2	23.0403	38.4	0.0811	38.7	0.0135	4.3	0.11	86.7	3.7	79.1	29.4	-144.5	983.7	86.7	3.7	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	34	LG3-37	94	67527	2.2	4.8792	0.2	14.9900	0.6	0.5305	0.6	0.93	2743.4	12.7	2814.6	5.8	2866.0	3.6	2866.0	3.6	96
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	35	LG3-38	261	109203	1.7	17.5469	2.3	0.6255	2.5	0.0796	1.0	0.41	493.7	4.9	493.3	9.7	491.1	49.8	493.7	4.9	101
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	36	LG3-39	835	243207	25.8	15.1829	0.3	1.1265	2.3	0.1240	2.3	0.99	753.8	16.5	766.1	12.6	802.0	6.4	753.8	16.5	94
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	37	LG3-40	490	185647	2.6	14.9502	0.3	1.2296	0.8	0.1333	0.8	0.92	806.8	5.7	814.2	4.6	834.3	6.8	806.8	5.7	97
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	38	LG3-41	74	3268	0.7	20.2349	39.9	0.0954	40.1	0.0140	3.9	0.10	89.6	3.5	92.5	35.5	167.8	968.0	89.6	3.5	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	39	LG3-42	27	1578	0.9	10.4890	132.8	0.1600	134.1	0.0122	18.2	0.14	78.0	14.1	150.7	190.0	1534.7	145.3	78.0	14.1	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	40	LG3-43	34	1954	1.8	51.2174	103.1	0.0406	103.5	0.0151	8.9	0.09	96.5	8.5	40.4	41.0	NA	NA	96.5	8.5	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	41	LG3-44	72	214008	1.1	6.0107	0.4	10.9967	0.8	0.4794	0.7	0.88	2524.6	14.5	2522.9	7.4	2521.4	6.4	2521.4	6.4	100
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	42	LG3-45	221	122337	1.4	14.9755	1.1	1.2122	2.1	0.1317	1.7	0.84	797.3	12.9	806.2	11.4	830.8	23.4	797.3	12.9	96
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	43	LG3-46	124	114139	1.3	14.7739	1.7	1.2748	3.1	0.1366	2.6	0.84	825.4	19.8	834.6	17.4	859.0	34.7	825.4	19.8	96
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	44	LG3-47	725	105926	1.3	17.4817	0.6	0.5507	3.4	0.0698	3.4	0.98	435.1	14.2	445.4	12.4	499.3	14.2	435.1	14.2	87
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	45	LG3-48	212	115875	1.0	16.7918	1.4	0.7816	2.1	0.0952	1.6	0.75	586.2	8.7	586.4	9.2	587.3	29.7	586.2	8.7	100
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	46	LG3-49	179	26260	1.4	16.6029	6.7	0.6380	7.7	0.0768	3.8	0.49	477.1	17.4	501.1	30.3	611.8	144.4	477.1	17.4	78
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	47	LG3-50	115	47634	2.0	14.9461	1.7	1.2306	2.7	0.1334	2.0	0.75	807.2	15.1	814.6	14.8	834.9	36.4	807.2	15.1	97
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	48	LG3-51	257	153282	2.4	17.3736	1.1	0.6339	2.1	0.0799	1.7	0.83	495.4	8.2	498.5	8.1	513.0	25.1	495.4	8.2	97
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	49	LG3-52	284	85508	1.2	17.3721	1.3	0.6262	1.8	0.0789	1.3	0.72	489.6	6.1	493.8	7.0	513.2	27.6	489.6	6.1	95
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	50	LG3-53	272	119857	1.7	17.1994	0.8	0.6479	1.4	0.0808	1.2	0.83	501.0	5.8	507.2	5.7	535.1	17.6	501.0	5.8	94
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	51	LG3-54	126	317446	0.9	6.3938	0.6	8.2681	2.8	0.3834	2.7	0.98	2092.2	48.8	2260.8	25.3	2417.1	10.0	2417.1	10.0	87
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	52	LG3-55	151	130678	1.2	13.3339	1.2	1.8706	3.0	0.1809	2.8	0.92	1071.9	27.2	1070.8	19.9	1068.4	24.3	1068.4	24.3	100
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	53	LG3-56	136	7444	1.7	22.3283	52.7	0.0382	53.3	0.0062	8.1	0.15	39.8	3.2	38.1	19.9	-67.3	1374.6	39.8	3.2	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	54	LG3-57	317	290563	1.6	14.9710	0.4	1.2654	3.0	0.1374	3.0	0.99	829.9	23.3	830.3	17.1	831.4	7.7	829.9	23.3	100
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	55	LG3-58	101	3475	1.1	24.0704	31.6	0.0457	32.7	0.0080	8.3	0.25	51.2	4.2	45.4	14.5	-254.0	818.6	51.2	4.2	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	56	LG3-59	552	355186	2.3	15.9389	0.5	0.8401	2.7	0.0971	2.7	0.98	597.5	15.3	619.2	12.7	699.4	11.1	597.5	15.3	85
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	57	LG3-60	1405	587142	1.0	17.3582	0.2	0.6403	1.2	0.0806	1.2	0.98	499.8	5.7	502.5	4.8	514.9	5.4	499.8	5.7	97
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	58	LG3-61	307	15193	2.2	6.3262	0.6	7.8800	3.3	0.3616	3.2	0.98	1989.5	55.1	2217.4	29.5	2435.1	9.8	2435.1	9.8	82
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	59	LG3-62	35	2484	1.2	35.6320	77.4	0.0765	78.1	0.0198	10.1	0.13	126.2	12.7	74.8	56.4	-1368.7	1008.5	126.2	12.7	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	60	LG3-63	262	180505	54.9	17.5818	2.3	0.4840	4.8	0.0617	4.2	0.88	386.0	15.9	400.8	15.9	486.8	50.0	386.0	15.9	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	61	LG3-64	39	17600	0.4	17.6252	9.2	0.6360	9.4	0.0813	1.4	0.15	503.9	7.0	499.8	36.9	481.3	204.6	503.9	7.0	105
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	62	LG3-65	43	3286	1.4	31.1957	34.1	0.0611	35.2	0.0138	8.7	0.25	88.5	7.6	60.2	20.6	-959.8	1026.5	88.5	7.6	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	63	LG3-66	75	10892	1.9	14.5707	7.6	1.3051	8.9	0.1379	4.5	0.51	832.9	34.9	848.0	50.9	887.7	158.1	832.9	34.9	94
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	64	LG3-67	2618	320294	0.8	17.3181	0.3	0.6317	4.6	0.0793	4.6	1.00	492.2	21.8	497.2	18.1	520.0	7.0	492.2	21.8	95
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	65	LG3-68	180	18246	1.8	17.1447	1.7	0.6604	2.2	0.0821	1.4	0.64	508.7	7.0	514.9	8.9	542.1	37.1	508.7	7.0	94
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	66	LG3-69	15	6105	1.2	7.4837	244.1	0.3842	244.4	0.0209	13.7	0.06	133.0	18.0	330.1	838.9	2146.1	213.8	133.0	18.0	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	67	LG3-70	3069	111125	4.6	17.3829	0.1	0.6783	7.4	0.0855	7.4	1.00	529.0	37.4	525.8	30.2	511.8	3.3	529.0	37.4	103
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	68	LG3-71	193	85458	0.8	12.5577	0.7	2.1434	1.1	0.1952	0.9	0.77	1149.6	9.0	1162.9	7.7	1187.9	14.1	1187.9	14.1	97
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	69	LG3-72	300	277790	1.8	14.9923	0.6	1.2723	2.4	0.1383	2.3	0.96	835.3	17.9	833.4	13.5	828.4	13.3	835.3	17.9	101
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	70	LG3-73	189	16331	1.3	20.6050	6.3	0.1400	6.7	0.0209	2.4	0.36	133.5	3.2	133.0	8.4	125.3	147.8	133.5	3.2	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	71	LG3-74	358	421022	0.9	9.9009	0.1	3.9483	0.9	0.2835	0.9	0.99	1609.1	13.2	1623.6	7.6	1642.6	2.5	1642.6	2.5	98
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	72	LG3-75	936	761502	1.2	9.9402	0.1	4.0031	3.1	0.2886	3.1	1.00	1634.5	44.7	1634.8	25.2	1635.2	2.5	1635.2	2.5	100
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	73	LG3-76	60	40125	1.2	14.7311	3.5	1.2334	4.3	0.1318	2.4	0.57	798.0	18.1	815.9	23.9	865.0	72.8	798.0	18.1	92
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	74	LG3-77	102	4498	8.0	21.9900	29.6	0.0451	30.7	0.0072	8.3	0.27	46.2	3.8	44.8	13.5	-30.1	730.9	46.2	3.8	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	75	LG3-78	280	4107	0.8	31.1475	77.4	0.0102	77.7	0.0023	6.9	0.09	14.9	1.0	10.3	8.0	-955.2	2676.6	14.9	1.0	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	76	LG3-79	41	6064	1.2	21.1705	38.1	0.1331	38.6	0.0204	6.2	0.16	130.4	8.0	126.9	46.0	61.2	937.1	130.4	8.0	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	77	LG3-80	2678	329024	0.7	17.4431	0.4	0.5367	21.2	0.0679	21.2	1.00	423.5	86.7	436.3	75.2	504.2	8.5	423.5	86.7	84
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	78	LG3-81	988	484899	4.1	17.3190	0.4	0.6520	2.0	0.0819	2.0	0.98	507.4	9.7	509.7	8.1	519.9	7.9	507.4	9.7	98
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	79	LG3-83	242	145230	1.9	13.0864	1.3	1.3851	5.9	0.1315	5.7	0.98	796.2	43.1	882.6	34.7	1106.0	25.0	796.2	43.1	72
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	80	LG3-84	306	519459	1.1	13.1590	0.5	1.9925	2.6	0.1902	2.5	0.98	1122.3	26.1	1113.0	17.4	1094.9	9.1	1094.9	9.1	102
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	81	LG3-85	46	57413	0.2	12.3844	2.2	2.3581	2.6	0.2118	1.5	0.56	1238.4	16.7	1230.0	18.8	1215.3	43.0	1215.3	43.0	102
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	82	LG3-86	110	164454	1.2	12.5976	0.9	2.1921	1.8	0.2003	1.5	0.87	1176.8	16.3	1178.5	12.2	1181.7	17.4	1181.7	17.4	100
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	83	LG3-87	213	66650	0.9	17.4674	3.1	0.6473	3.3	0.0820	1.3	0.38	508.0	6.2	506.8	13.3	501.2	68.2	508.0	6.2	101
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	84	LG3-89	2764	176843	14.1	12.5172	0.2	2.3524	14.5	0.2136	14.5	1.00	1247.8	164.4	1228.3	103.6	1194.3	4.6	1194.3	4.6	104
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	85	LG3-90	92	167963	0.2	10.4740	1.1	3.5016	1.4	0.2660	0.9	0.65	1520.5	12.5	1527.6	11.3	1537.4	20.4	1537.4	20.4	99
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	86	LG3-91	417	167461	3.5	17.0692	0.4	0.7414	1.4	0.0918	1.3	0.95	566.0	7.0	563.2	5.9	551.7	9.5	566.0	7.0	103
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	87	LG3-92	516	341171	43.9	15.2760	1.0	1.0981	5.9	0.1217	5.8	0.99	740.1	40.7	752.4	31.4	789.2	20.2	740.1	40.7	94
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	88	LG3-93	140	151615	1.8	13.1422	1.1	1.9982	1.6	0.1905	1.2	0.75	1123.9	12.6	1114.9	10.9	1097.5	21.2	1097.5	21.2	102
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	89	LG3-94	196	74754	2.6	17.0955	1.7	0.7321	2.1	0.0908	1.1	0.54	560.1	6.0	557.8	8.9	548.4	38.2	560.1	6.0	102
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	90	LG3-95	181	157963	2.0	10.0605	0.3	3.5828	3.2	0.2614	3.2	1.00	1497.1	42.6	1545.7	25.4	1612.8	5.4	1612.8	5.4	93
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	91	LG3-96	101	122340	0.8	17.6728	5.5	0.6599	12.6	0.0846	11.4	0.90	523.4	57.2	514.6	51.1	475.3	122.0	523.4	57.2	110
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	92	LG3-97	590	95286	1.9	7.1590	0.4	5.6648	5.3	0.2941	5.3	1.00	1662.1	77.9	1926.0	46.1	2223.3	7.4	2223.3	7.4	75
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	93	LG3-98	277	153420	1.3	17.4914	1.0	0.6566	2.0	0.0833	1.7	0.86	515.8	8.6	512.6	8.1	498.1	22.4	515.8	8.6	104
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	94	LG3-99	432	40847	1.7	9.1738	0.2	4.7087	8.5	0.3133	8.5	1.00	1756.9	130.0	1768.8	70.9	1782.8	3.6	1782.8	3.6	99
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	95	LG3-100	1908	257122	1.5	17.4192	0.3	0.6047	8.9	0.0764	8.9	1.00	474.6	40.5	480.2	33.9	507.2	5.6	474.6	40.5	94
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	96	LG3-101	548	207353	3.3	17.4521	0.8	0.6467	2.0	0.0819	1.8	0.91	507.2	8.7	506.4	7.9	503.1	17.9	507.2	8.7	101
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	97	LG3-102	162	67014	2.8	17.1884	3.5	0.5090	4.3	0.0634	2.5	0.58	396.6	9.5	417.7	14.7	536.5	77.0	396.6	9.5	NA
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	98	LG3-103	130	156075	0.7	14.2111	1.2	1.5172	1.7	0.1564	1.2	0.69	936.6	10.4	937.3	10.5	939.1	25.4	936.6	10.4	100
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	99	LG3-104	288	185223	1.3	14.9039	0.8	1.2778	1.9	0.1381	1.8	0.91	834.0	13.7	835.9	11.0	840.7	16.4	834.0	13.7	99
27.742817	94.715333	LIKABALI	UPPER SIWALIK	LG3	100	LG3-105	116	45481	1.1	12.8630	2.2	1.9839	2.8	0.1851	1.7	0.63	1094.7	17.6	1110.0	18.7	1140.3	42.8	1140.3	42.8	96
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	1	LG2.5-01	355	173523	1.9	17.4185	0.7	0.6640	2.3	0.0839	2.1	0.95	519.2	10.7	517.0	9.2	507.3	16.2	519.2	10.7	102
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	2	LG2.5-02	271	258551	1.6	11.8529	0.6	2.3256	2.6	0.1999	2.5	0.97	1174.9	26.9	1220.1	18.3	1301.0	11.8	1301.0	11.8	90
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	3	LG2.5-03	242	137469	1.8	15.0533	0.5	1.2314	1.9	0.1344	1.9	0.97	813.1	14.2	815.0	10.8	820.0	10.3	813.1	14.2	99
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	4	LG2.5-04	93	8562	1.1	12.3220	1.3	2.2375	5.6	0.2000	5.5	0.97	1175.1	58.8	1192.9	39.5	1225.2	25.9	1225.2	25.9	96
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	5	LG2.5-05	559	15518	3.8	22.0692	10.0	0.0483	10.3	0.0077	2.4	0.24	49.7	1.2	47.9	4.8	-38.8	242.8	49.7	1.2	NA
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	6	LG2.5-06	262	14543	1.7	21.1674	20.3	0.0655	20.7	0.0101	3.9	0.19	64.5	2.5	64.4	12.9	61.5	489.2	64.5	2.5	NA
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	7	LG2.5-07	106	81963	0.7	15.8613	1.9	1.0396	3.7	0.1196	3.2	0.86	728.2	22.2	723.7	19.3	709.8	40.0	728.2	22.2	103
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	8	LG2.5-08	2455	564101	6.4	17.3526	0.2	0.6601	2.8	0.0831	2.8	1.00	514.5	13.9	514.7	11.4	515.6	3.3	514.5	13.9	100

27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	9	LG2.5-09	372	66565	0.9	13.1403	1.3	2.0285	7.7	0.1933	7.6	0.98	1139.3	78.9	1125.1	52.2	1097.8	26.7	1097.8	26.7	104
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	10	LG2.5-10	128	18140	0.9	9.2429	0.5	3.7003	6.2	0.2480	6.1	1.00	1428.4	78.7	1571.4	49.3	1769.2	8.5	1769.2	8.5	81
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	11	LG2.5-12	330	257058	6.7	15.0066	0.8	1.2413	2.7	0.1351	2.6	0.95	816.9	20.0	819.5	15.4	826.4	17.5	816.9	20.0	99
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	12	LG2.5-13	457	157455	1.3	17.4940	1.1	0.6219	4.8	0.0789	4.7	0.97	489.6	22.1	491.1	18.7	497.8	24.6	489.6	22.1	98
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	13	LG2.5-14	303	33136	2.0	14.4447	0.9	1.1279	3.7	0.1182	3.6	0.97	720.0	24.8	766.7	20.1	905.6	17.6	720.0	24.8	80
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	14	LG2.5-15	510	294126	1.8	11.9179	0.2	2.3855	2.2	0.2062	2.2	1.00	1208.5	23.9	1238.3	15.6	1290.4	4.2	1290.4	4.2	94
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	15	LG2.5-16	820	555272	1.6	14.9449	0.2	1.3001	3.1	0.1409	3.1	1.00	849.8	24.5	845.8	17.7	835.0	3.8	849.8	24.5	102
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	16	LG2.5-17	247	142943	1.1	17.2577	1.0	0.6629	2.3	0.0830	2.0	0.89	513.8	10.0	516.4	9.2	527.7	22.8	513.8	10.0	97
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	17	LG2.5-18	193	79207	1.9	17.2539	2.1	0.6147	3.9	0.0769	3.3	0.84	477.7	15.1	486.5	15.2	528.2	46.8	477.7	15.1	90
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	18	LG2.5-19	954	605621	6.7	13.1464	0.2	1.6532	6.2	0.1576	6.2	1.00	943.6	54.8	990.8	39.5	1096.8	4.4	1096.8	4.4	86
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	19	LG2.5-20	316	114020	1.6	17.4740	1.7	0.6451	2.9	0.0818	2.3	0.79	506.6	11.1	505.5	11.4	500.3	38.3	506.6	11.1	101
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	20	LG2.5-21	280	85935	1.1	18.1043	1.6	0.5173	2.3	0.0679	1.7	0.72	423.7	6.8	423.4	8.0	421.7	35.9	423.7	6.8	100
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	21	LG2.5-22	29	6258	0.4	12.7507	4.0	1.7339	4.8	0.1603	2.5	0.53	958.7	22.5	1021.2	30.8	1157.7	80.3	1157.7	80.3	83
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	22	LG2.5-23	163	43377	0.5	17.4821	2.3	0.6598	4.6	0.0837	4.0	0.86	517.9	19.9	514.5	18.7	499.3	51.6	517.9	19.9	104
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	23	LG2.5-24	262	13942	1.8	21.4723	10.0	0.1020	10.4	0.0159	3.1	0.29	101.6	3.1	98.6	9.8	27.3	239.8	101.6	3.1	NA
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	24	LG2.5-26	103	152880	1.2	9.1199	0.4	4.5698	3.2	0.3023	3.2	0.99	1702.5	47.6	1743.8	26.7	1793.6	8.0	1793.6	8.0	95
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	25	LG2.5-27	2977	208919	64.8	20.0428	0.3	0.3715	3.9	0.0540	3.9	1.00	339.0	12.8	320.7	10.7	190.0	6.9	339.0	12.8	NA
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	26	LG2.5-28	1307	68074	0.6	20.3907	3.8	0.0321	4.8	0.0047	2.9	0.61	30.5	0.9	32.0	1.5	149.8	88.7	30.5	0.9	NA
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	27	LG2.5-29	441	137686	3.3	16.1645	0.5	0.9550	1.9	0.1120	1.8	0.96	684.1	11.7	680.7	9.4	669.4	11.4	684.1	11.7	102
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	28	LG2.5-30	186	25284	1.1	11.0523	0.8	2.5679	5.1	0.2058	5.1	0.99	1206.6	55.7	1291.6	37.5	1435.6	15.3	1435.6	15.3	84
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	29	LG2.5-31	175	8955	1.2	16.9325	3.5	0.6721	4.3	0.0825	2.5	0.58	511.2	12.3	522.0	17.5	569.3	76.2	511.2	12.3	90
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	30	LG2.5-32	257	219991	1.5	10.6858	1.7	2.9311	55.0	0.2272	55.0	1.00	1319.6	658.8	1390.0	442.8	1499.7	31.3	1499.7	31.3	88
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	31	LG2.5-33	753	12355	2.4	22.0139	7.2	0.0281	7.9	0.0045	3.3	0.41	28.9	0.9	28.1	2.2	-32.7	174.4	28.9	0.9	NA
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	32	LG2.5-34	375	36220	1.1	21.2845	7.6	0.0639	12.4	0.0099	9.7	0.79	63.3	6.1	62.9	7.5	48.4	182.8	63.3	6.1	NA
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	33	LG2.5-35	74	5848	1.2	20.2209	20.1	0.1262	20.6	0.0185	4.2	0.21	118.2	5.0	120.7	23.4	169.4	474.0	118.2	5.0	NA
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	34	LG2.5-36	288	53925	1.3	12.3762	0.3	2.4157	4.6	0.2168	4.5	1.00	1265.1	52.3	1247.3	32.8	1216.6	6.2	1216.6	6.2	104
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	35	LG2.5-38	427	18603	1.1	13.7299	1.1	1.5698	3.4	0.1563	3.2	0.94	936.3	28.0	958.3	21.1	1009.3	22.8	936.3	28.0	93
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	36	LG2.5-39	141	49355	1.4	17.1548	1.1	0.6092	6.3	0.0758	6.2	0.98	470.9	28.2	483.0	24.3	540.8	25.1	470.9	28.2	87
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	37	LG2.5-40	1721	390058	1.9	17.3078	0.3	0.6412	5.8	0.0805	5.8	1.00	499.0	27.8	503.0	23.0	521.3	7.3	499.0	27.8	96
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	38	LG2.5-43	2986	22197	2.0	20.0765	2.5	0.1514	19.0	0.0220	18.8	0.99	140.6	26.2	143.2	25.3	186.1	57.6	140.6	26.2	NA
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	39	LG2.5-44	427	191753	1.9	17.5278	1.0	0.4335	5.9	0.0551	5.8	0.98	345.8	19.5	365.6	18.1	493.6	22.6	345.8	19.5	NA
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	40	LG2.5-47	439	656657	1.6	12.5957	0.2	2.2367	2.4	0.2043	2.4	0.99	1198.5	25.9	1192.6	16.7	1182.0	4.8	1182.0	4.8	101
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	41	LG2.5-48	147	8210	2.5	25.4599	39.6	0.0299	41.0	0.0055	10.8	0.26	35.5	3.8	30.0	12.1	-398.2	1067.6	35.5	3.8	NA
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	42	LG2.5-49	533	186332	2.1	12.8078	20.9	1.9410	38.0	0.1803	31.8	0.84	1068.6	313.2	1095.3	260.5	1148.9	419.5	1148.9	419.5	93
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	43	LG2.5-51	358	35265	0.7	20.8249	12.5	0.0844	12.9	0.0127	3.3	0.25	81.6	2.6	82.3	10.2	100.2	296.7	81.6	2.6	NA
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	44	LG2.5-52	1141	856509	1.9	17.4862	0.5	0.6424	3.3	0.0815	3.2	0.99	504.9	15.7	503.8	13.0	498.8	10.2	504.9	15.7	101
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	45	LG2.5-53	361	92173	2.2	17.4350	0.8	0.6624	10.7	0.0838	10.7	1.00	518.6	53.4	516.1	43.5	505.3	18.0	518.6	53.4	103
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	46	LG2.5-54	365	128422	1.3	17.6227	1.2	0.6224	6.5	0.0796	6.4	0.98	493.5	30.3	491.4	25.3	481.6	26.5	493.5	30.3	102
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	47	LG2.5-55	1032	620884	1.2	17.3759	0.4	0.6385	2.6	0.0805	2.6	0.99	498.9	12.3	501.4	10.3	512.7	9.3	498.9	12.3	97
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	48	LG2.5-57	223	169763	4.7	13.8843	1.6	1.6513	4.8	0.1663	4.5	0.94	991.6	41.3	990.0	30.1	986.6	31.8	991.6	41.3	101
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	49	LG2.5-58	160	214826	0.6	9.4669	0.5	4.5633	3.3	0.3133	3.2	0.99	1757.0	49.5	1742.6	27.2	1725.3	9.4	1725.3	9.4	102
27.721233	94.706617	LIKABALI	MIDDLE SIWALIK	LG2.5	50	LG2.5-60	195	167193	0.9	12.5672	0.6	2.3189	4.1	0.2114	4.1	0.99	1236.1	46.2	1218.1	29.4	1186.4	11.0	1186.4	11.0	104
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	1	LG2-1	538	455420	10.0	6.5597	0.5	8.3925	1.3	0.3993	1.2	0.93	2165.7	22.6	2274.4	11.9	2373.5	8.1	2373.5	8.1	91
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	2	LG2-2	359	344153	1.4	9.9941	0.4	3.8318	6.4	0.2777	6.4	1.00	1580.0	89.9	1599.4	51.8	1625.2	6.7	1625.2	6.7	97
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	3	LG2-3	147	10809	2.2	20.7360	17.9	0.0528	18.6	0.0079	4.9	0.27	50.9	2.5	52.2	9.5	110.3	426.1	50.9	2.5	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	4	LG2-4	83	2430	2.0	21.3306	118.3	0.0493	118.7	0.0076	10.3	0.09	48.9	5.0	48.8	56.7	43.2	1167.3	48.9	5.0	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	5	LG2-5	715	441519	6.5	16.6774	0.3	0.7792	1.0	0.0942	0.9	0.96	580.6	5.2	585.0	4.4	602.2	5.7	580.6	5.2	96
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	6	LG2-6	38	1590	1.1	10.2957	226.1	0.1632	226.2	0.0122	6.2	0.03	78.1	4.8	153.5	333.7	1569.7	590.7	78.1	4.8	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	7	LG2-8	163	216031	1.6	6.2574	0.2	9.8228	2.2	0.4458	2.2	1.00	2376.5	44.4	2418.3	20.6	2453.6	2.6	2453.6	2.6	97
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	8	LG2-10	38	6066	1.9	16.1843	42.7	0.1456	43.7	0.0171	9.4	0.21	109.2	10.2	138.0	56.5	666.8	956.7	109.2	10.2	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	9	LG2-11	847	27870	2.8	20.5479	2.6	0.0568	2.8	0.0085	1.0	0.37	54.4	0.6	56.1	1.5	131.8	60.1	54.4	0.6	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	10	LG2-12	125	207230	0.8	13.8731	1.6	1.6126	2.0	0.1623	1.2	0.62	969.3	11.1	975.1	12.4	988.3	31.6	969.3	11.1	98
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	11	LG2-13	116	24771	1.2	13.8042	0.9	1.4162	1.6	0.1418	1.3	0.83	854.8	10.7	895.8	9.5	998.4	18.1	854.8	10.7	86
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	12	LG2-14	468	62627	2.0	10.9938	3.6	2.1502	6.3	0.1714	5.2	0.82	1020.1	49.0	1165.1	44.0	1445.8	69.3	1445.8	69.3	71
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	13	LG2-15	78	3925	1.0	22.8878	28.3	0.0746	28.9	0.0124	5.9	0.20	79.3	4.6	73.0	20.3	-128.0	710.0	79.3	4.6	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	14	LG2-16	362	203846	0.9	8.7578	0.4	4.7616	1.9	0.3024	1.9	0.98	1703.4	28.3	1778.2	16.2	1867.0	7.0	1867.0	7.0	91
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	15	LG2-17	264	96200	0.9	12.4888	0.7	2.2234	2.7	0.2014	2.6	0.97	1182.8	28.6	1188.4	19.1	1198.8	13.3	1198.8	13.3	99
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	16	LG2-18	260	128812	1.9	17.1579	1.7	0.7158	2.2	0.0891	1.4	0.63	550.1	7.2	548.2	9.3	540.4	37.2	550.1	7.2	102
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	17	LG2-19	361	564595	1.1	10.2176	0.2	3.6762	3.8	0.2724	3.8	1.00	1553.1	52.8	1566.2	30.6	1583.9	3.4	1583.9	3.4	98
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	18	LG2-20	153	67916	1.0	5.5958	0.1	11.9527	1.7	0.4851	1.7	1.00	2549.4	34.9	2600.7	15.6	2640.9	2.3	2640.9	2.3	97
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	19	LG2-21	464	170649	1.2	17.6671	0.8	0.5916	1.5	0.0758	1.2	0.82	471.1	5.5	471.9	5.6	476.1	18.6	471.1	5.5	99
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	20	LG2-22	896	468595	1.5	17.4167	0.6	0.6382	1.5	0.0806	1.4	0.91	499.8	6.5	501.2	5.9	507.5	13.5	499.8	6.5	98
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	21	LG2-23	85	94707	2.1	5.1850	0.7	9.5708	4.6	0.3599	4.5	0.99	1981.8	76.6	2394.4	41.9	2766.7	12.1	2766.7	12.1	72
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	22	LG2-24	225	41434	1.5	19.8183	6.6	0.2364	7.1	0.0340	2.6	0.37	215.4	5.6	215.4	13.7	216.1	152.2	215.4	5.6	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	23	LG2-26	64	58600	1.0	13.0282	2.2	1.6358	3.3	0.1546	2.4	0.75	926.5	21.1	984.1	20.7	1114.9	43.6	1114.9	43.6	83
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	24	LG2-29	1884	640995	1.0	17.5510	0.2	0.6080	1.4	0.0774	1.4	0.99	480.6	6.4	482.3	5.3	490.6	3.4	480.6	6.4	98
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	25	LG2-30	619	71766	1.3	20.1250	1.4	0.2383	2.0	0.0348	1.5	0.73	220.4	3.2	217.0	4.0	180.5	32.6	220.4	3.2	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	26	LG2-31	85	131727	0.9	10.4180	0.8	3.6338	2.0	0.2746	1.8	0.90	1563.9	24.7	1557.0	15.7	1547.5	15.8	1547.5	15.8	101
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	27	LG2-32	214	9723	0.8	22.0073	22.2	0.0360	22.8	0.0057	5.1	0.22	37.0	1.9	35.9	8.0	-32.0	543.7	37.0	1.9	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	28	LG2-34	316	201614	0.5	9.5327	0.5	4.4343	7.6	0.3066	7.6	1.00	1723.8	115.3	1718.8	63.4	1712.6	9.1	1712.6	9.1	101
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	29	LG2-37	287	8815	2.9	33.0579	34.4	0.0205	34.6	0.0049	3.5	0.10	31.6	1.1	20.6	7.1	NA	NA	31.6	1.1	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	30	LG2-38	47	32763	1.1	12.5823	4.5	1.0145	14.9	0.0926	14.3	0.95	570.8	77.9	711.2	76.5	1184.1	88.3	570.8	77.9	48
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	31	LG2-39	99	34702	2.4	16.2290	5.2	0.5262	6.4	0.0619	3.7	0.58	387.4	14.0	429.3	22.5	660.9	112.3	387.4	14.0	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	32	LG2-40	194	5663	1.5	17.4223	18.0	0.0617	18.2	0.0078	2.8	0.16	50.1	1.4	60.8	10.7	506.8	397.7	50.1	1.4	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	33	LG2-41	121	49433	0.5	17.2283	3.1	0.6685	4.1	0.0835	2.6	0.64	517.2	12.9	519.8	16.5	531.4	68.4	517.2	12.9	97
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	34	LG2-42	76	3398	1.1	24.5530	25.9	0.0759	26.2	0.0135	4.4	0.17	86.5	3.8	74.2	18.8	-304.6	671.1	86.5	3.8	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	35	LG2-43	63	15137	1.5	19.1315	21.5	0.2445	21.8	0.0339	3.3	0.15	215.1	7.0	222.1	43.4	297.2	495.9	215.1	7.0	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	36	LG2-44	199	3756	3.0	13.7063	2.5	0.4279	10.1	0.0425	9.7	0.97	268.6	25.6	361.7	30.6	1012.8	51.0	268.6	25.6	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	37	LG2-45	106	116536	1.7	11.0527	0.8	3.1469	3.6	0.2523	3.5	0.97	1450.1	45.3	1444.2	27.6	1435.6	15.3	1435.6	15.3	101
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	38	LG2-46	183	59629	0.7	12.7444	0.8	1.8126	14.9	0.1675	14.9	1.00	998.6	137.8	1050.0	98.0	1158.7	16.5	1158.7	16.5	86
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	39	LG2-47	1786	34883	5.5	17.3843	0.6	0.4777	36.3	0.0602	36.3	1.00	377.0	132.9	396.5	119.7	511.7	12.8	377.0	132.9	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	40	LG2-48	279	278309	3.1	9.8632	0.3	3.9050	2.0	0.2793	2.0	0.99	1588.0	28.2	1614.7	16.4	1649.7	6.0	1649.7	6.0	96
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	41	LG2-49	90	80362	0.8	12.2230	1.0	2.1885	2.0	0.1940	1.7	0.87	1143.1	18.3	1177.4	14.0	1241.0	19.5	1241.0	19.5	92
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	42	LG2-50	125	57703	0.3	16.8503	2.0	0.7678	2.3	0.0938	1.2	0.53	578.2	6.8	578.5	10.3	579.8	43.0	578.2	6.8	100
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	43	LG2-51	20	21185	0.4	12.6948	6.3	2.1869	6.6	0.2014	1.9	0.29	1182.6	21.0	1176.9	46.0	1166.4	125.0	1166.4	125.0	101
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	44	LG2-52	47	2511	1.4	25.4486	27.7	0.0733	28.9	0.0135	8.1	0.28	86.6	7.0	71.8	20.0	-397.1	734.8	86.6	7.0	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	45	LG2-53	971	429803	140.2	17.2560	0.3	0.6387	2.7	0.0799	2.7	0.99	495.7	12.8	501.5	10.7	527.9	7.5	495.7	12.8	94
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	46	LG2-54	42	3189	1.4	45.1242	65.4	0.0474	66.2	0.0155	10.4	0.16	99.1	10.2	47.0	30.4	NA	NA	99.1	10.2	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	47	LG2-55	543	604857	3.2	17.3930	0.6	0.6270	1.5	0.0791	1.4	0.92	490.7	6.5	494.2	5.8	510.5	13.0	490.7	6.5	96
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	48	LG2-56	34	42027	0.7	10.2307	3.1	3.7603	4.0	0.2790	2.6	0.63	1586.4	35.9	1584.3	32.3	1581.5	58.2	1581.5	58.2	100
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	49	LG2-57	58	1614	1.2	29.8687	52.0	0.0353	53.1	0.0077	10.8	0.20	49.2	5.3	35.3	18.4	-833.8	1576.8	49.2	5.3	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	50	LG2-58	108	522	1.5	18.3360	28.1	0.0794	28.9	0.0106	6.4	0.22	67.8	4.3	77.6	21.6	393.3	642.8	67.8	4.3	NA

27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	51	LG2-59	276	203025	1.7	15.0677	0.9	1.0733	1.4	0.1173	1.1	0.78	715.0	7.5	740.4	7.5	818.0	18.6	715.0	7.5	87
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	52	LG2-60	374	54532	1.3	14.9450	1.5	0.9063	2.6	0.0982	2.2	0.82	604.1	12.4	655.1	12.6	835.0	30.9	604.1	12.4	72
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	53	LG2-61	121	88354	2.6	14.7028	2.1	1.3475	3.0	0.1437	2.0	0.69	865.5	16.5	866.5	17.2	869.0	44.3	865.5	16.5	100
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	54	LG2-62	251	194594	8.6	15.8872	1.3	0.9312	1.8	0.1073	1.2	0.68	657.0	7.5	668.3	8.6	706.4	27.3	657.0	7.5	93
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	55	LG2-63	124	4796	1.9	24.1656	25.9	0.0501	26.3	0.0088	4.7	0.18	56.3	2.6	49.6	12.7	-264.0	665.9	56.3	2.6	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	56	LG2-64	1590	630515	2.2	17.3412	0.2	0.6263	3.0	0.0788	3.0	1.00	488.8	13.9	493.8	11.6	517.1	5.4	488.8	13.9	95
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	57	LG2-65	109	5973	0.9	34.5655	23.0	0.0540	23.3	0.0135	3.5	0.15	86.7	3.1	53.4	12.1	NA	NA	86.7	3.1	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	58	LG2-66	24	2239	1.1	9.9835	39.5	0.1821	46.0	0.0132	23.5	0.51	84.4	19.7	169.9	72.0	1627.1	767.0	84.4	19.7	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	59	LG2-67	265	549221	1.3	11.1840	0.4	3.0635	0.9	0.2485	0.8	0.91	1430.7	10.8	1423.6	7.0	1413.0	7.2	1413.0	7.2	101
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	60	LG2-68	143	15016	1.2	26.1052	29.1	0.0797	29.4	0.0151	4.0	0.14	96.5	3.9	77.8	22.0	-463.9	782.4	96.5	3.9	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	61	LG2-69	63	104743	2.8	9.8624	1.5	3.9485	2.8	0.2824	2.4	0.85	1603.6	34.3	1623.7	22.9	1649.8	27.4	1649.8	27.4	97
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	62	LG2-70	595	296609	1.4	15.0169	0.5	1.0585	2.1	0.1153	2.0	0.97	703.4	13.6	733.1	11.0	825.0	11.3	703.4	13.6	85
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	63	LG2-71	65	4882	1.2	26.5866	56.6	0.0692	56.8	0.0133	3.8	0.07	85.4	3.2	67.9	37.3	-512.5	1628.9	85.4	3.2	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	64	LG2-72	379	10740	0.9	13.7028	0.7	1.2913	3.5	0.1283	3.4	0.98	778.3	25.0	841.9	19.9	1013.3	13.9	778.3	25.0	77
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	65	LG2-73	79	446	1.0	18.0624	57.7	0.1184	60.5	0.0155	18.1	0.30	99.2	17.8	113.7	65.1	426.9	1405.7	99.2	17.8	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	66	LG2-74	90	8719	1.0	24.8764	25.2	0.0750	25.8	0.0135	5.6	0.22	86.6	4.8	73.4	18.3	-338.1	657.4	86.6	4.8	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	67	LG2-76	385	11354	0.8	12.3921	1.2	2.1668	4.9	0.1947	4.8	0.97	1147.0	50.4	1170.4	34.3	1214.1	23.2	1214.1	23.2	94
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	68	LG2-77	172	15929	35.1	17.2239	10.9	0.1118	21.0	0.0140	18.0	0.86	89.4	16.0	107.6	21.5	532.0	239.0	89.4	16.0	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	69	LG2-78	65	5901	0.7	25.0050	63.7	0.0731	63.9	0.0133	5.6	0.09	84.9	4.8	71.7	44.3	-351.5	1820.9	84.9	4.8	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	70	LG2-79	1070	595102	1.0	17.4699	0.4	0.6191	1.8	0.0784	1.7	0.97	486.8	8.1	489.3	7.0	500.9	9.9	486.8	8.1	97
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	71	LG2-80	83	97014	1.3	10.1151	0.5	3.6897	2.0	0.2707	1.9	0.97	1544.3	26.7	1569.1	16.1	1602.7	9.7	1602.7	9.7	96
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	72	LG2-81	274	6763	1.8	20.3162	22.3	0.0247	24.8	0.0036	10.8	0.43	23.4	2.5	24.8	6.1	158.4	527.6	23.4	2.5	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	73	LG2-82	403	23546	1.4	21.1369	5.2	0.0892	5.6	0.0137	2.1	0.38	87.6	1.9	86.8	4.7	64.9	123.7	87.6	1.9	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	74	LG2-83	612	201302	6.2	17.0157	0.6	0.7357	0.9	0.0908	0.7	0.79	560.2	4.0	559.9	4.0	558.6	12.6	560.2	4.0	100
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	75	LG2-84	700	14015	1.3	16.5789	1.9	0.7877	2.2	0.0947	1.0	0.46	583.4	5.6	589.9	9.8	615.0	41.9	583.4	5.6	95
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	76	LG2-85	213	99226	26.0	18.5472	2.4	0.4231	3.5	0.0569	2.6	0.74	356.8	9.0	358.3	10.7	367.5	54.1	356.8	9.0	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	77	LG2-86	30	2910	2.5	9.3689	344.4	0.2476	344.5	0.0168	10.1	0.03	107.5	10.7	224.6	848.9	1744.4	951.5	107.5	10.7	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	78	LG2-88	2486	971560	98.6	17.1666	0.3	0.6404	1.0	0.0797	0.9	0.96	494.5	4.4	502.6	3.8	539.3	5.5	494.5	4.4	92
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	79	LG2-89	445	178531	4.7	16.4182	1.1	0.6251	3.4	0.0744	3.2	0.94	462.8	14.2	493.0	13.1	636.0	24.1	462.8	14.2	73
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	80	LG2-90	186	145179	1.1	13.2105	0.4	1.9819	1.4	0.1899	1.4	0.96	1120.8	14.0	1109.4	9.6	1087.1	8.3	1087.1	8.3	103
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	81	LG2-91	61	31721	0.9	17.9421	27.6	0.1044	28.5	0.0136	6.8	0.24	87.0	5.9	100.9	27.3	441.8	625.3	87.0	5.9	NA
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	82	LG2-93	430	244203	1.7	14.9723	0.4	1.2225	2.6	0.1328	2.6	0.99	803.6	19.5	810.9	14.5	831.2	7.8	803.6	19.5	97
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	83	LG2-94	115	96346	1.1	12.6732	1.0	2.1927	2.6	0.2015	2.4	0.92	1183.6	25.5	1178.7	18.0	1169.8	20.6	1169.8	20.6	101
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	84	LG2-95	63	40483	1.1	13.8650	2.9	1.6383	4.2	0.1647	3.0	0.73	983.1	27.6	985.1	26.3	989.4	58.4	983.1	27.6	99
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	85	LG2-96	410	169962	1.4	17.4369	0.8	0.6418	1.5	0.0812	1.2	0.85	503.1	6.0	503.4	5.8	505.0	16.8	503.1	6.0	100
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	86	LG2-97	513	311084	1.1	17.3647	0.7	0.6793	2.3	0.0855	2.2	0.95	529.1	11.1	526.3	9.4	514.1	15.1	529.1	11.1	103
27.707233	94.675233	LIKABALI	MIDDLE SIWALIK	LG2	87	LG2-98	653	616826	9.0	10.3003	0.2	3.4681	1.2	0.2591	1.1	0.99	1485.2	15.2	1520.0	9.1	1568.8	3.0	1568.8	3.0	95
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	1	LG0.5-01	60	7671	1.9	22.7941	36.9	0.0684	37.6	0.0113	7.1	0.19	72.4	5.1	67.1	24.4	-117.9	937.3	72.4	5.1	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	2	LG0.5-03	263	310920	1.6	10.6412	0.8	3.3703	1.2	0.2601	0.9	0.76	1490.4	12.1	1497.5	9.4	1507.6	14.7	1507.6	14.7	99
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	3	LG0.5-04	78	203744	1.7	9.2345	0.7	4.7337	1.9	0.3170	1.8	0.93	1775.3	27.6	1773.2	16.0	1770.8	12.5	1770.8	12.5	100
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	4	LG0.5-05	340	11454	0.5	19.6169	3.9	0.1450	4.3	0.0206	1.9	0.45	131.6	2.5	137.4	5.6	239.8	88.9	131.6	2.5	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	5	LG0.5-06	31	17347	0.4	17.5624	13.3	0.6448	13.6	0.0821	2.5	0.18	508.8	12.2	505.2	54.0	489.2	295.1	508.8	12.2	104
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	6	LG0.5-07	170	10689	0.8	21.8878	13.7	0.0877	14.1	0.0139	3.1	0.22	89.1	2.7	85.3	11.5	-18.8	333.2	89.1	2.7	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	7	LG0.5-08	327	243286	0.9	12.8540	0.3	1.9518	2.4	0.1820	2.4	0.99	1077.7	23.8	1099.1	16.2	1141.7	6.2	1141.7	6.2	94
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	8	LG0.5-09	177	29883	1.5	9.4086	0.4	4.5068	2.1	0.3075	2.1	0.98	1728.6	31.1	1732.2	17.4	1736.6	7.2	1736.6	7.2	100
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	9	LG0.5-10	15	6109	1.1	17.9425	24.0	0.7032	24.3	0.0915	3.7	0.15	564.5	20.3	540.7	102.2	441.7	540.8	564.5	20.3	128
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	10	LG0.5-11	203	153109	1.3	6.2658	0.3	9.4605	1.9	0.4299	1.8	0.99	2305.4	35.8	2383.7	17.1	2451.4	4.5	2451.4	4.5	94
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	11	LG0.5-12	344	123945	1.9	17.1093	1.0	0.7081	1.4	0.0879	1.0	0.72	542.9	5.4	543.6	6.1	546.6	21.8	542.9	5.4	99
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	12	LG0.5-13	210	145086	1.1	13.8062	0.6	1.6753	1.4	0.1678	1.2	0.88	999.7	11.2	999.2	8.7	998.1	13.1	999.7	11.2	100
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	13	LG0.5-14	71	42857	0.7	17.4200	6.2	0.6084	6.4	0.0769	1.8	0.28	477.4	8.4	482.6	24.7	507.1	135.9	477.4	8.4	94
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	14	LG0.5-15	148	116429	2.6	16.5065	1.2	0.8142	1.9	0.0975	1.5	0.79	599.6	8.5	604.8	8.6	624.4	25.1	599.6	8.5	96
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	15	LG0.5-16	179	134656	0.8	13.4726	0.6	1.7351	2.8	0.1695	2.8	0.97	1009.6	25.7	1021.6	18.2	1047.6	13.0	1047.6	13.0	96
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	16	LG0.5-17	152	43628	1.5	16.1826	3.1	0.7768	4.2	0.0912	2.9	0.68	562.5	15.5	583.7	18.8	667.0	66.3	562.5	15.5	84
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	17	LG0.5-18	53	68652	0.3	12.5607	2.1	2.2566	2.3	0.2056	0.9	0.39	1205.2	10.0	1198.8	16.4	1187.5	42.4	1187.5	42.4	101
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	18	LG0.5-19	247	264260	1.8	12.8685	0.4	2.0243	0.7	0.1889	0.7	0.88	1115.6	6.7	1123.7	5.0	1139.4	7.1	1139.4	7.1	98
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	19	LG0.5-20	30	18821	0.5	12.8056	4.0	2.0828	4.3	0.1934	1.7	0.40	1140.0	18.3	1143.2	29.7	1149.2	78.7	1149.2	78.7	99
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	20	LG0.5-21	122	45197	1.6	17.5488	2.4	0.6760	3.0	0.0860	1.8	0.61	532.1	9.3	524.4	12.2	490.9	51.9	532.1	9.3	108
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	21	LG0.5-22	136	152995	1.4	13.1532	0.9	1.9568	2.0	0.1867	1.8	0.90	1103.3	18.1	1100.8	13.3	1095.8	17.0	1095.8	17.0	101
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	22	LG0.5-23	653	97948	1.8	13.4883	2.3	1.7595	3.2	0.1721	2.2	0.70	1023.8	20.9	1030.7	20.5	1045.3	45.6	1045.3	45.6	98
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	23	LG0.5-24	110	142977	1.4	9.2406	0.4	4.6233	2.0	0.3098	2.0	0.98	1740.0	29.9	1753.5	16.7	1769.6	7.5	1769.6	7.5	98
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	24	LG0.5-25	156	383773	2.5	10.9714	0.4	3.2884	2.4	0.2617	2.3	0.99	1498.3	31.1	1478.3	18.3	1449.6	7.0	1449.6	7.0	103
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	25	LG0.5-26	271	258056	3.6	13.5369	0.5	1.7733	1.5	0.1741	1.4	0.94	1034.7	13.2	1035.7	9.6	1038.0	10.1	1038.0	10.1	100
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	26	LG0.5-27	81	33909	0.9	17.7582	5.8	0.6402	5.9	0.0825	1.3	0.22	510.8	6.3	502.4	23.4	464.7	127.6	510.8	6.3	110
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	27	LG0.5-28	56	33451	0.6	12.8907	1.8	2.1156	2.8	0.1978	2.2	0.77	1163.5	23.2	1153.9	19.6	1136.0	36.3	1136.0	36.3	102
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	28	LG0.5-29	168	320560	1.6	9.3419	0.2	4.6646	1.1	0.3160	1.1	0.98	1770.4	16.9	1760.9	9.3	1749.7	4.1	1749.7	4.1	101
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	29	LG0.5-30	242	221603	1.4	9.8664	0.5	3.3958	2.8	0.2430	2.7	0.99	1402.2	34.4	1503.4	21.7	1649.0	8.7	1649.0	8.7	85
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	30	LG0.5-31	198	570050	1.2	6.0460	0.2	10.6412	1.2	0.4666	1.2	0.98	2468.7	25.1	2492.3	11.5	2511.6	3.6	2511.6	3.6	98
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	31	LG0.5-32	26	1374	1.4	18.2652	46.3	0.1617	48.9	0.0214	15.9	0.33	136.6	21.5	152.2	69.3	402.0	1092.4	136.6	21.5	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	32	LG0.5-33	31	2030	1.3	24.6491	57.6	0.1113	58.5	0.0199	10.2	0.17	127.0	12.9	107.2	59.6	-314.6	1600.0	127.0	12.9	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	33	LG0.5-34	35	24878	0.4	12.5810	5.5	2.0697	5.8	0.1889	1.6	0.29	1115.2	16.8	1138.8	39.4	1184.3	109.1	1184.3	109.1	94
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	34	LG0.5-35	36	40565	1.8	12.6169	1.2	2.1047	2.0	0.1926	1.6	0.80	1135.4	17.1	1150.4	14.1	1178.6	24.0	1178.6	24.0	96
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	35	LG0.5-36	240	127872	7.1	15.9895	1.3	0.9766	2.1	0.1132	1.7	0.78	691.6	11.0	691.8	10.7	692.6	28.3	691.6	11.0	100
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	36	LG0.5-37	235	134384	5.7	17.1077	1.0	0.7157	3.1	0.0888	3.0	0.95	548.4	15.7	548.1	13.3	546.8	21.4	548.4	15.7	100
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	37	LG0.5-38	219	180191	3.0	13.4095	0.5	1.7957	2.0	0.1746	1.9	0.96	1037.6	18.5	1043.9	13.1	1057.1	10.9	1057.1	10.9	98
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	38	LG0.5-39	77	25257	0.7	17.1699	3.9	0.7138	4.5	0.0889	2.3	0.52	549.0	12.4	547.0	19.1	538.8	84.4	549.0	12.4	102
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	39	LG0.5-40	127	177262	0.8	11.9192	1.4	2.5108	3.0	0.2170	2.7	0.88	1266.3	30.6	1275.2	22.0	1290.2	28.2	1290.2	28.2	98
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	40	LG0.5-41	46	36029	0.9	14.2328	3.0	1.4838	4.4	0.1532	3.2	0.73	918.7	27.5	923.8	26.8	936.0	62.3	918.7	27.5	98
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	41	LG0.5-42	87	95834	2.5	14.4630	3.0	1.4226	5.4	0.1492	4.5	0.83	896.6	37.3	898.5	32.0	903.0	61.7	896.6	37.3	99
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	42	LG0.5-43	86	70179	0.9	12.8380	1.0	2.1965	1.5	0.2045	1.1	0.73	1199.5	12.2	1179.9	10.7	1144.2	20.8	1144.2	20.8	105
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	43	LG0.5-45	229	194198	2.9	14.1317	1.1	1.5067	3.7	0.1544	3.5	0.95	925.7	30.0	933.1	22.3	950.6	23.1	925.7	30.0	97
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	44	LG0.5-46	89	142634	1.3	12.8117	1.0	2.1470	1.3	0.1995	0.9	0.67	1172.6	9.4	1164.1	9.0	1148.2	19.1	1148.2	19.1	102
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	45	LG0.5-47	276	6792	2.5	14.6819	0.7	1.2183	1.9	0.1297	1.8	0.92	786.3	13.3	809.0	10.8	871.9	15.5	786.3	13.3	90
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	46	LG0.5-48	307	325401	1.4	13.9469	0.5	1.6703	1.1	0.1690	1.0	0.89	1006.4	8.9	997.3	6.8	977.4	10.0	1006.4	8.9	103
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	47	LG0.5-50	107	10005	1.1	18.8632	22.4	0.1006	22.7	0.0138	3.8	0.17	88.1	3.4	97.3	21.1	329.4	513.6	88.1	3.4	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	48	LG0.5-51	189	93379	2.3	15.3140	1.0	1.2037	2.1	0.1337	1.9	0.87	808.9	14.1	802.3	11.7	784.0	21.6	808.9	14.1	103
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	49	LG0.5-52	169	25533	2.8	8.8027	1.4	5.3969	6.2	0.3446	6.0	0.97	1908.6	99.0	1884.4	52.7	1857.8	25.3	1857.8	25.3	103
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	50	LG0.5-53	126	11636	1.5	22.4188	30.3	0.0939	30.5	0.0153	2.9	0.10	97.7	2.8	91.1	26.6	-77.1	756.6	97.7	2.8	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	51	LG0.5-54	105	85774	0.9	16.8420	3.6	0.7138	3.8	0.0872	1.4	0.35	538.9	7.0	547.0	16.2	580.9	77.8	538.9	7.0	93
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	52	LG0.5-55	310	35527	1.7	13.1261	0.4	1.9009	1.3	0.1810	1.2	0.95	1072.2	12.3	1081.4	8.7	1099.9	8.5	1099.9	8.5	97
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	53	LG0.5-56	313	144083	2.3	14.2512	0.9	1.4684	4.3	0.1518	4.2	0.98	910.9	35.5	917.5	25.9	933.3	19.1	910.9	35.5	98
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	54	LG0.5-57	623	23919	0.9	18.9909	1.1	0.3250	1.8	0.0448	1.5	0.81	282.3	4.1	285.8	4.6	314.1	24.3	282.3	4.1	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	55	LG0.5-58	27	7231	1.4	18.0678	14.0	0.6427	14.3	0.0842	2.7	0.19	521.3	13.6	504.0	56.7	426.2	313.7	521.3	13.6	122

27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	56	LG0.5-59	136	69770	2.1	15.5803	1.5	1.0784	4.9	0.1219	4.7	0.95	741.3	32.7	742.9	25.8	747.7	30.9	741.3	32.7	99
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	57	LG0.5-60	147	92518	0.6	16.8231	1.4	0.7225	2.0	0.0882	1.4	0.72	544.6	7.4	552.2	8.4	583.3	30.1	544.6	7.4	93
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	58	LG0.5-61	216	192485	1.2	8.3876	1.6	5.6387	6.4	0.3430	6.2	0.97	1901.2	101.4	1922.0	54.9	1944.6	28.9	1944.6	28.9	98
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	59	LG0.5-62	59	3608	1.1	14.0658	7.6	1.3941	7.9	0.1422	2.2	0.27	857.2	17.3	886.4	47.0	960.2	156.4	857.2	17.3	89
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	60	LG0.5-63	403	33617	1.6	21.0290	7.9	0.0993	8.2	0.0151	2.0	0.24	96.9	1.9	96.1	7.5	77.1	189.1	96.9	1.9	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	61	LG0.5-64	223	34271	3.9	13.7237	1.2	1.5980	1.9	0.1591	1.4	0.74	951.5	12.2	969.4	11.6	1010.2	25.2	951.5	12.2	94
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	62	LG0.5-65	103	8817	1.1	21.5811	26.9	0.0843	27.4	0.0132	5.4	0.20	84.5	4.5	82.2	21.7	15.2	657.0	84.5	4.5	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	63	LG0.5-66	109	39508	0.6	16.8268	3.8	0.7867	4.3	0.0960	2.1	0.48	591.0	11.7	589.3	19.2	582.9	81.7	591.0	11.7	101
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	64	LG0.5-67	74	25483	0.8	17.3689	5.0	0.6577	5.2	0.0829	1.5	0.29	513.1	7.4	513.2	21.1	513.6	110.3	513.1	7.4	100
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	65	LG0.5-68	91	4372	0.5	15.2982	5.0	1.0030	6.0	0.1113	3.5	0.57	680.2	22.3	705.3	30.7	786.2	104.1	680.2	22.3	87
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	66	LG0.5-69	111	22686	2.5	14.1368	1.6	1.4946	2.9	0.1532	2.4	0.82	919.1	20.4	928.2	17.6	949.8	33.7	919.1	20.4	97
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	67	LG0.5-70	145	109994	0.9	11.4260	3.2	2.5972	27.0	0.2152	26.8	0.99	1256.6	306.5	1299.9	200.6	1371.9	61.6	1371.9	61.6	92
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	68	LG0.5-71	123	1278343	2.1	6.1673	0.3	9.5239	1.7	0.4260	1.6	0.98	2287.6	31.2	2389.9	15.2	2478.2	5.8	2478.2	5.8	92
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	69	LG0.5-72	158	293427	1.2	9.3589	0.4	4.5120	1.0	0.3063	0.9	0.89	1722.3	12.9	1733.2	7.9	1746.4	7.9	1746.4	7.9	99
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	70	LG0.5-73	429	71458	4.9	9.0747	0.2	4.3884	0.9	0.2888	0.9	0.98	1635.7	13.0	1710.2	7.5	1802.6	2.9	1802.6	2.9	91
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	71	LG0.5-74	390	89136	0.5	20.0491	2.7	0.2341	2.9	0.0340	1.1	0.38	215.8	2.4	213.6	5.6	189.3	62.7	215.8	2.4	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	72	LG0.5-75	124	37889	1.2	16.8066	2.4	0.7939	3.1	0.0968	1.9	0.61	595.5	10.5	593.4	13.7	585.5	52.8	595.5	10.5	102
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	73	LG0.5-76	460	426629	7.8	14.3678	0.5	1.3836	2.7	0.1442	2.6	0.98	868.2	21.3	882.0	15.7	916.6	10.0	868.2	21.3	95
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	74	LG0.5-77	232	97710	0.8	17.0846	1.3	0.6780	1.8	0.0840	1.2	0.66	520.0	5.8	525.6	7.2	549.7	29.1	520.0	5.8	95
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	75	LG0.5-78	293	191486	9.3	13.6074	0.6	1.5940	3.8	0.1573	3.7	0.99	941.8	32.8	967.9	23.6	1027.5	11.8	941.8	32.8	92
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	76	LG0.5-79	252	329258	2.3	12.7795	0.8	2.0458	1.6	0.1896	1.4	0.87	1119.3	14.7	1130.9	11.2	1153.2	16.0	1153.2	16.0	97
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	77	LG0.5-80	467	419189	3.2	14.4181	0.5	1.4347	1.3	0.1500	1.3	0.94	901.1	10.6	903.5	8.0	909.4	9.8	901.1	10.6	99
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	78	LG0.5-81	709	100699	2.0	7.5737	0.3	6.8986	8.4	0.3789	8.4	1.00	2071.3	148.1	2098.5	74.3	2125.2	4.5	2125.2	4.5	97
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	79	LG0.5-83	202	226334	1.5	13.3141	0.6	1.9240	1.7	0.1858	1.6	0.94	1098.5	16.4	1089.5	11.5	1071.4	11.6	1071.4	11.6	103
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	80	LG0.5-84	46	7247	1.6	20.4409	18.8	0.1395	21.4	0.0207	10.1	0.47	132.0	13.2	132.6	26.6	144.1	444.7	132.0	13.2	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	81	LG0.5-85	133	74533	1.3	14.4749	1.2	1.4078	5.7	0.1478	5.5	0.98	888.6	45.9	892.2	33.6	901.3	25.4	888.6	45.9	99
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	82	LG0.5-86	221	49601	1.4	19.0301	2.8	0.3703	3.2	0.0511	1.6	0.49	321.3	5.0	319.9	8.9	309.3	64.2	321.3	5.0	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	83	LG0.5-87	852	519933	2.1	13.6357	0.2	1.7470	1.5	0.1728	1.5	0.99	1027.4	14.6	1026.1	10.0	1023.3	4.0	1023.3	4.0	100
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	84	LG0.5-88	28	23893	1.4	10.0888	2.6	3.9745	2.9	0.2908	1.3	0.45	1645.6	18.8	1629.0	23.3	1607.6	47.8	1607.6	47.8	102
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	85	LG0.5-89	94	29707	1.4	16.5976	2.2	0.8292	2.6	0.0998	1.2	0.49	613.3	7.3	613.2	11.8	612.5	48.4	613.3	7.3	100
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	86	LG0.5-90	113	152589	1.9	14.3390	1.4	1.4820	2.5	0.1541	2.1	0.82	924.1	18.0	923.1	15.4	920.7	29.6	924.1	18.0	100
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	87	LG0.5-91	227	318582	3.2	13.4848	0.9	1.6778	7.9	0.1641	7.8	0.99	979.5	71.3	1000.1	50.3	1045.8	18.7	1045.8	18.7	94
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	88	LG0.5-92	208	98298	3.6	16.8172	2.0	0.7893	2.8	0.0963	2.1	0.73	592.5	11.7	590.8	12.7	584.1	42.3	592.5	11.7	101
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	89	LG0.5-93	473	248180	4.0	14.7259	0.8	1.2890	6.1	0.1377	6.1	0.99	831.5	47.2	840.9	34.9	865.8	16.0	831.5	47.2	96
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	90	LG0.5-94	213	38365	4.8	18.8321	2.9	0.3966	3.8	0.0542	2.5	0.65	340.1	8.2	339.2	11.0	333.1	65.6	340.1	8.2	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	91	LG0.5-95	277	18162	1.3	20.8266	11.2	0.0967	11.5	0.0146	2.4	0.21	93.5	2.2	93.8	10.3	100.0	266.6	93.5	2.2	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	92	LG0.5-96	202	13465	2.1	16.2632	2.2	0.9182	3.4	0.1083	2.6	0.76	662.9	16.3	661.4	16.6	656.4	47.8	662.9	16.3	101
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	93	LG0.5-97	18	1750	1.6	11.0560	181.9	0.2117	184.9	0.0170	33.3	0.18	108.5	35.8	195.0	340.3	1435.0	478.7	108.5	35.8	NA
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	94	LG0.5-98	63	52604	1.1	11.0629	1.3	3.0711	3.8	0.2464	3.6	0.94	1419.9	45.9	1425.5	29.3	1433.8	25.0	1433.8	25.0	99
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	95	LG0.5-99	130	103424	2.8	13.6635	1.1	1.7704	3.7	0.1754	3.5	0.95	1042.0	34.0	1034.7	24.1	1019.1	23.2	1019.1	23.2	102
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	96	LG0.5-100	53	63077	1.2	9.3778	0.7	4.7021	2.7	0.3198	2.6	0.96	1788.8	40.7	1767.6	22.7	1742.7	13.3	1742.7	13.3	103
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	97	LG0.5-101	162	246083	0.6	14.2252	1.5	1.1454	4.6	0.1182	4.3	0.94	720.1	29.5	775.1	24.9	937.1	31.3	720.1	29.5	77
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	98	LG0.5-102	266	63414	0.9	12.5355	0.5	2.2870	1.2	0.2079	1.1	0.91	1217.8	12.0	1208.3	8.4	1191.4	9.8	1191.4	9.8	102
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	99	LG0.5-103	242	655843	2.2	8.7595	0.2	5.4469	1.5	0.3460	1.5	0.99	1915.7	24.5	1892.3	12.8	1866.7	3.6	1866.7	3.6	103
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	100	LG0.5-104	547	85739	7.3	5.9638	0.3	7.6057	4.2	0.3290	4.2	1.00	1833.4	67.0	2185.5	37.8	2534.6	5.2	2534.6	5.2	72
27.66355	94.699917	LIKABALI	MIDDLE SIWALIK	LG0.5	101	LG0.5-105	196	22791	1.2	20.7087	11.8	0.1266	11.9	0.0190	2.0	0.17	121.4	2.5	121.0	13.6	113.4	278.1	121.4	2.5	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	1	LG5.1-01	45	19365	0.4	17.3192	9.4	0.6600	9.8	0.0829	2.6	0.26	513.4	12.6	514.6	39.5	519.9	207.6	513.4	12.6	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	2	LG5.1-02	131	222100	1.4	9.9949	0.3	3.9764	3.1	0.2882	3.1	1.00	1632.8	44.7	1629.4	25.3	1625.0	5.7	1625.0	5.7	100
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	3	LG5.1-03	1516	20671	27.7	22.1505	10.1	0.0191	10.3	0.0031	1.7	0.17	19.8	0.3	19.2	2.0	-47.8	246.8	19.8	0.3	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	4	LG5.1-04	132	58525	3.6	17.5380	3.8	0.6015	4.7	0.0765	2.8	0.59	475.3	12.8	478.2	18.0	492.3	83.9	475.3	12.8	97
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	5	LG5.1-05	442	206216	2.1	17.5141	0.7	0.6851	8.1	0.0870	8.0	1.00	537.9	41.4	529.9	33.3	495.3	14.6	537.9	41.4	109
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	6	LG5.1-06	684	183026	10.9	15.5497	4.2	0.7162	5.2	0.0808	3.1	0.60	500.7	15.1	548.4	22.2	751.8	88.7	500.7	15.1	67
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	7	LG5.1-07	912	771499	5.6	11.8073	0.2	2.6725	2.4	0.2289	2.4	1.00	1328.5	29.0	1320.9	17.9	1308.5	3.7	1308.5	3.7	102
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	8	LG5.1-08	183	70930	1.7	17.0435	2.0	0.7360	2.3	0.0910	1.2	0.53	561.4	6.5	560.1	9.9	555.0	42.5	561.4	6.5	101
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	9	LG5.1-09	245	62093	1.6	17.6226	1.7	0.6058	2.4	0.0774	1.7	0.70	480.8	7.8	480.9	9.2	481.6	37.9	480.8	7.8	100
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	10	LG5.1-10	200	262755	1.4	11.8914	0.5	2.5572	1.5	0.2205	1.4	0.94	1284.7	16.3	1288.5	10.9	1294.7	9.6	1294.7	9.6	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	11	LG5.1-11	763	7568	0.4	20.7279	11.1	0.0411	19.3	0.0062	15.8	0.82	39.7	6.3	40.9	7.8	111.2	263.3	39.7	6.3	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	12	LG5.1-12	73	14811	1.6	13.1932	2.6	1.5935	3.2	0.1525	1.8	0.56	914.8	15.2	967.7	19.8	1089.7	52.5	1089.7	52.5	84
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	13	LG5.1-13	609	489423	10.9	17.4738	0.6	0.6041	1.2	0.0766	1.0	0.85	475.6	4.7	479.9	4.6	500.4	13.7	475.6	4.7	95
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	14	LG5.1-14	74	112973	1.2	9.6331	0.9	4.0394	1.8	0.2822	1.6	0.86	1602.5	22.3	1642.2	14.9	1693.3	17.2	1693.3	17.2	95
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	15	LG5.1-15	1272	410508	15.1	17.5486	0.8	0.5116	11.0	0.0651	10.9	1.00	406.7	43.1	419.6	37.7	490.9	17.1	406.7	43.1	83
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	16	LG5.1-16	248	157268	0.6	12.4979	0.7	2.2023	1.6	0.1996	1.5	0.92	1173.3	16.1	1181.8	11.4	1197.3	13.0	1197.3	13.0	98
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	17	LG5.1-17	167	233544	1.5	9.2304	0.2	4.8020	2.9	0.3215	2.9	1.00	1796.9	45.0	1785.3	24.2	1771.6	3.8	1771.6	3.8	101
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	18	LG5.1-18	1920	62776	2.8	21.0517	2.9	0.0422	3.8	0.0064	2.4	0.64	41.4	1.0	41.9	1.6	74.5	69.1	41.4	1.0	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	19	LG5.1-19	835	145666	6.8	6.0646	0.5	9.0394	4.1	0.3976	4.1	0.99	2157.9	74.7	2342.0	37.5	2506.4	8.6	2506.4	8.6	86
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	20	LG5.1-21	291	288669	1.6	15.0622	0.5	1.2573	1.8	0.1373	1.7	0.95	829.6	13.2	826.7	10.1	818.8	11.3	829.6	13.2	101
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	21	LG5.1-22	98	74256	0.8	12.6920	6.5	2.0913	9.2	0.1925	6.5	0.71	1135.0	67.9	1146.0	63.3	1166.8	128.8	1166.8	128.8	97
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	22	LG5.1-23	1641	489237	5.1	17.4360	0.3	0.6506	2.7	0.0823	2.7	1.00	509.7	13.3	508.8	10.9	505.1	5.5	509.7	13.3	101
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	23	LG5.1-24	578	149143	1.7	17.3686	0.9	0.6400	2.6	0.0806	2.4	0.94	499.9	11.8	502.3	10.3	513.6	19.1	499.9	11.8	97
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	24	LG5.1-25	294	22385	1.4	21.5788	3.2	0.1248	4.9	0.0195	3.7	0.75	124.7	4.6	119.4	5.5	15.4	77.6	124.7	4.6	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	25	LG5.1-26	1659	43753	9.7	18.0567	1.7	0.2034	16.2	0.0266	16.1	0.99	169.5	26.9	188.0	27.8	427.6	38.3	169.5	26.9	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	26	LG5.1-27	204	248082	1.2	14.8385	1.1	1.2742	2.5	0.1371	2.2	0.89	828.4	17.2	834.2	14.1	849.9	23.3	828.4	17.2	97
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	27	LG5.1-28	148	266911	1.9	9.9983	0.6	3.8712	1.2	0.2807	1.1	0.89	1595.0	15.4	1607.7	9.9	1624.4	10.4	1624.4	10.4	98
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	28	LG5.1-30	39	7866	1.5	27.2470	44.2	0.1085	45.2	0.0214	9.1	0.20	136.8	12.3	104.6	44.9	-578.4	1248.4	136.8	12.3	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	29	LG5.1-31	20	13781	0.4	14.7335	6.9	1.2630	7.7	0.1350	3.5	0.45	816.1	26.8	829.3	43.8	864.7	143.0	816.1	26.8	94
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	30	LG5.1-32	132	34629	1.3	8.5443	0.7	5.1106	6.3	0.3167	6.2	0.99	1773.6	96.4	1837.9	53.2	1911.5	13.1	1911.5	13.1	93
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	31	LG5.1-33	176	336751	1.1	10.0396	0.4	3.8488	7.0	0.2802	7.0	1.00	1592.6	98.4	1603.0	56.3	1616.7	6.7	1616.7	6.7	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	32	LG5.1-34	113	73618	1.6	17.1296	2.8	0.7048	3.2	0.0876	1.4	0.45	541.1	7.4	541.7	13.3	544.0	61.6	541.1	7.4	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	33	LG5.1-36	115	337428	5.0	3.6707	0.2	23.1550	2.7	0.6164	2.7	1.00	3095.7	65.6	3233.5	26.0	3320.1	3.3	3320.1	3.3	93
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	34	LG5.1-37	571	295419	1.4	17.3282	0.7	0.6357	9.3	0.0799	9.2	1.00	495.5	44.1	499.7	36.6	518.7	14.4	495.5	44.1	96
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	35	LG5.1-39	1633	541883	3.2	17.3582	0.3	0.6530	1.6	0.0822	1.6	0.99	509.3	7.8	510.3	6.5	514.9	6.0	509.3	7.8	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	36	LG5.1-40	336	313326	1.3	17.3846	1.6	0.6233	3.4	0.0786	3.0	0.88	487.7	14.1	491.9	13.4	511.6	36.3	487.7	14.1	95
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	37	LG5.1-41	20	1027	0.8	19.3419	54.9	0.1499	55.6	0.0210	9.2	0.17	134.1	12.2	141.8	73.7	272.2	1356.9	134.1	12.2	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	38	LG5.1-42	166	47754	1.4	17.6349	2.4	0.6180	2.9	0.0790	1.6	0.54	490.4	7.4	488.6	11.2	480.1	53.8	490.4	7.4	102
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	39	LG5.1-43	107	102199	1.1	9.4247	0.5	4.4615	1.5	0.3050	1.4	0.95	1715.9	21.7	1723.8	12.5	1733.5	8.6	1733.5	8.6	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	40	LG5.1-44	49	33698	0.8	12.7448	2.8	1.9364	7.3	0.1790	6.8	0.93	1061.4	66.5	1093.7	49.1	1158.6	54.6	1158.6	54.6	92
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	41	LG5.1-45	57	67521	1.0	13.0680	1.9	1.8749	3.5	0.1777	2.9	0.83	1054.4	28.1	1072.3	23.1	1108.8	38.9	1108.8	38.9	95
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	42	LG5.1-46	229	156006	1.9	14.8936	0.6	1.2166	2.4	0.1314	2.4	0.97	795.9	17.8	808.2	13.6	842.2	11.6	795.9	17.8	95
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	43	LG5.1-47	507	28209	5.3	20.3188	8.3	0.0538	9.4	0.0079	4.4	0.47	50.9	2.2	53.2	4.9	158.1	195.0	50.9	2.2	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	44	LG5.1-48	1138	217250	5.1	17.3549	0.4	0.6717	5.2	0.0845	5.1	1.00	523.2	25.8	521.7	21.0	515.3	9.4	523.2	25.8	102
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	45	LG5.1-49	74	4336	0.7	19.0450	38.9	0.1053	39.8	0.0145	8.1	0.20	93.1	7.5	101.6	38.5	307.6	918.7	93.1	7.5	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	46	LG5.1-51	249	115207	3.2	13.1149	1.3	0.9169	4.1	0.0872	3.9	0.95	539.1	20.0	660.7	19.9	1101.6	26.6	539.1	20.0	49

27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	47	LG5.1-52	299	70008	3.5	12.5904	0.5	1.9319	1.4	0.1764	1.3	0.93	1047.3	12.1	1092.2	9.1	1182.8	10.2	1182.8	10.2	89
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	48	LG5.1-53	86	42574	1.9	15.0136	2.3	1.2187	2.9	0.1327	1.8	0.61	803.2	13.3	809.2	16.1	825.5	47.8	803.2	13.3	97
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	49	LG5.1-54	153	12418	1.2	16.6332	14.8	0.0691	15.0	0.0083	2.5	0.17	53.5	1.4	67.9	9.9	607.9	322.1	53.5	1.4	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	50	LG5.1-55	224	221986	3.0	13.9253	0.7	1.6380	2.8	0.1654	2.7	0.97	986.9	25.1	984.9	17.8	980.6	13.5	986.9	25.1	101
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	51	LG5.1-56	752	236468	9.9	11.7485	0.3	2.3723	1.2	0.2021	1.2	0.97	1186.8	12.5	1234.3	8.5	1318.2	5.4	1318.2	5.4	90
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	52	LG5.1-57	1128	136463	4.9	12.1397	1.1	2.2786	4.4	0.2006	4.2	0.97	1178.7	45.4	1205.7	30.8	1254.4	22.1	1254.4	22.1	94
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	53	LG5.1-58	113	97407	1.1	17.2144	3.7	0.6470	4.3	0.0808	2.2	0.51	500.8	10.6	506.6	17.1	533.2	80.7	500.8	10.6	94
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	54	LG5.1-59	92	45102	1.5	12.6179	0.7	2.1740	2.7	0.1989	2.6	0.97	1169.7	28.2	1172.7	19.0	1178.5	13.7	1178.5	13.7	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	55	LG5.1-60	546	111250	10.8	17.2629	1.1	0.6471	2.7	0.0810	2.5	0.91	502.2	11.9	506.7	10.8	527.1	24.1	502.2	11.9	95
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	56	LG5.1-61	115	90721	1.1	12.8055	1.3	2.0178	1.9	0.1874	1.5	0.76	1107.3	15.0	1121.5	13.1	1149.2	25.0	1149.2	25.0	96
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	57	LG5.1-62	88	10252	1.1	16.1796	5.0	0.7947	13.3	0.0933	12.3	0.93	574.8	67.7	593.8	59.9	667.4	108.0	574.8	67.7	86
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	58	LG5.1-63	228	6812	1.5	26.2774	29.6	0.0395	29.8	0.0075	3.6	0.12	48.3	1.7	39.3	11.5	-481.3	800.0	48.3	1.7	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	59	LG5.1-64	44	37837	1.8	13.5658	4.1	1.7510	4.3	0.1723	1.3	0.31	1024.7	12.8	1027.5	27.7	1033.6	82.3	1033.6	82.3	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	60	LG5.1-65	479	176358	1.9	17.3985	1.0	0.5966	3.5	0.0753	3.3	0.96	467.9	15.0	475.1	13.1	509.9	21.9	467.9	15.0	92
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	61	LG5.1-66	505	519146	6.3	9.4132	0.3	4.6050	1.1	0.3144	1.1	0.97	1762.3	16.6	1750.2	9.3	1735.8	4.9	1735.8	4.9	102
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	62	LG5.1-67	237	225615	1.1	12.9713	0.7	1.9294	2.0	0.1815	1.8	0.93	1075.2	18.2	1091.3	13.2	1123.6	14.0	1123.6	14.0	96
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	63	LG5.1-68	150	474971	0.7	6.1220	0.1	10.9614	3.2	0.4867	3.2	1.00	2556.4	68.4	2519.9	30.2	2490.6	1.5	2490.6	1.5	103
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	64	LG5.1-69	227	105430	1.5	17.3845	2.0	0.6429	2.6	0.0811	1.7	0.64	502.4	8.1	504.1	10.3	511.6	43.7	502.4	8.1	98
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	65	LG5.1-70	107	68588	0.5	15.4879	2.0	1.1078	2.9	0.1244	2.2	0.75	756.1	15.7	757.1	15.7	760.2	41.2	756.1	15.7	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	66	LG5.1-71	96	113837	0.5	12.6248	1.0	2.1824	1.9	0.1998	1.7	0.87	1174.4	18.1	1175.4	13.5	1177.4	19.2	1177.4	19.2	100
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	67	LG5.1-72	60	3586	0.9	27.4113	57.7	0.0733	57.9	0.0146	5.1	0.09	93.3	4.7	71.8	40.2	-594.7	1693.5	93.3	4.7	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	68	LG5.1-73	143	16401	1.0	19.4664	7.2	0.2746	7.3	0.0388	1.4	0.19	245.2	3.3	246.4	16.1	257.5	165.8	245.2	3.3	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	69	LG5.1-74	199	666	0.8	16.7315	26.2	0.1790	27.7	0.0217	9.2	0.33	138.5	12.6	167.2	42.8	595.1	576.1	138.5	12.6	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	70	LG5.1-75	94	77955	1.2	14.9337	3.2	1.2608	5.5	0.1366	4.5	0.82	825.1	34.9	828.3	31.2	836.6	66.0	825.1	34.9	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	71	LG5.1-76	22	25852	1.3	12.2632	3.2	2.4316	4.1	0.2163	2.5	0.61	1262.1	28.4	1252.0	29.2	1234.6	63.0	1234.6	63.0	102
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	72	LG5.1-77	765	320865	8.9	13.1934	0.1	1.9266	1.5	0.1844	1.5	1.00	1090.7	15.2	1090.4	10.1	1089.7	2.3	1089.7	2.3	100
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	73	LG5.1-78	96	98845	1.2	10.3884	0.8	3.4835	3.2	0.2625	3.1	0.97	1502.4	41.7	1523.5	25.4	1552.9	15.4	1552.9	15.4	97
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	74	LG5.1-79	252	76672	2.9	9.1623	0.4	4.5423	4.1	0.3018	4.1	0.99	1700.4	61.4	1738.7	34.4	1785.1	7.8	1785.1	7.8	95
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	75	LG5.1-80	109	152093	1.4	9.2006	0.4	4.7830	2.7	0.3192	2.7	0.99	1785.7	41.7	1781.9	22.8	1777.5	8.0	1777.5	8.0	100
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	76	LG5.1-81	21	9665	0.4	18.0150	11.1	0.6176	12.1	0.0807	4.8	0.39	500.3	22.9	488.4	46.8	432.8	247.5	500.3	22.9	116
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	77	LG5.1-82	150	4945	0.6	23.2311	39.4	0.0474	40.0	0.0080	6.9	0.17	51.3	3.5	47.1	18.4	-164.9	1014.5	51.3	3.5	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	78	LG5.1-83	148	90629	1.6	14.6234	1.0	1.3321	1.6	0.1413	1.3	0.79	851.9	10.4	859.8	9.5	880.2	20.9	851.9	10.4	97
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	79	LG5.1-84	119	111920	0.7	12.8306	1.2	2.0648	3.0	0.1921	2.7	0.92	1133.0	28.2	1137.2	20.3	1145.3	23.4	1145.3	23.4	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	80	LG5.1-85	1855	420609	3.1	17.4433	0.2	0.6091	7.3	0.0771	7.3	1.00	478.5	33.7	483.0	28.1	504.2	4.4	478.5	33.7	95
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	81	LG5.1-86	446	42961	0.7	6.0008	0.5	9.3590	3.0	0.4073	3.0	0.99	2202.7	55.9	2373.8	27.9	2524.2	8.7	2524.2	8.7	87
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	82	LG5.1-87	118	125646	1.8	12.5040	0.8	2.2825	2.2	0.2070	2.1	0.93	1212.8	22.7	1206.9	15.6	1196.3	16.0	1196.3	16.0	101
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	83	LG5.1-88	97	45094	0.4	16.6269	3.3	0.8057	3.4	0.0972	0.9	0.28	597.7	5.4	600.0	15.4	608.7	70.5	597.7	5.4	98
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	84	LG5.1-89	118	108103	0.5	14.2605	1.0	1.5161	1.9	0.1568	1.6	0.85	939.0	13.7	936.9	11.3	932.0	20.3	939.0	13.7	101
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	85	LG5.1-90	84	48100	1.1	12.6472	1.4	2.1400	1.8	0.1963	1.0	0.58	1155.4	10.7	1161.8	12.2	1173.9	28.4	1173.9	28.4	98
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	86	LG5.1-91	828	386405	2.1	17.3923	0.6	0.6232	1.6	0.0786	1.4	0.93	487.8	6.8	491.8	6.1	510.7	13.0	487.8	6.8	96
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	87	LG5.1-92	412	32830	1.0	14.9775	1.0	1.1659	4.2	0.1266	4.1	0.97	768.7	29.6	784.7	23.0	830.5	21.7	768.7	29.6	93
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	88	LG5.1-93	285	79128	2.1	17.4799	2.1	0.6028	2.8	0.0764	1.9	0.66	474.7	8.6	479.0	10.9	499.6	47.2	474.7	8.6	95
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	89	LG5.1-94	55	20909	2.7	17.0986	3.4	0.7421	4.7	0.0920	3.3	0.70	567.6	17.7	563.7	20.2	548.0	73.2	567.6	17.7	104
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	90	LG5.1-95	87	7453	1.2	21.9336	34.5	0.1062	34.7	0.0169	3.5	0.10	107.9	3.7	102.4	33.8	-23.9	857.8	107.9	3.7	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	91	LG5.1-96	93	90513	0.7	12.9752	1.6	1.6968	8.7	0.1597	8.6	0.98	955.0	76.3	1007.3	55.9	1123.0	31.7	1123.0	31.7	85
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	92	LG5.1-97	242	339737	2.3	14.2367	0.8	1.4893	2.0	0.1538	1.9	0.93	922.1	16.1	926.0	12.3	935.4	15.6	922.1	16.1	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	93	LG5.1-98	135	435888	2.5	8.7842	0.4	5.2874	1.8	0.3369	1.7	0.97	1871.5	27.8	1866.8	15.1	1861.6	7.8	1861.6	7.8	101
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	94	LG5.1-99	2051	5770	0.7	20.8807	2.3	0.0491	4.3	0.0074	3.6	0.84	47.7	1.7	48.7	2.0	93.9	54.1	47.7	1.7	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	95	LG5.1-100	43	94919	0.9	3.7127	0.3	23.9931	2.2	0.6461	2.2	0.99	3212.8	54.7	3268.1	21.2	3302.2	4.0	3302.2	4.0	97
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	96	LG5.1-101	156	79110	1.3	17.0658	2.8	0.6855	3.2	0.0848	1.6	0.50	525.0	8.1	530.1	13.2	552.1	60.4	525.0	8.1	95
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	97	LG5.1-102	579	242823	2.1	17.4075	0.6	0.6446	1.7	0.0814	1.6	0.93	504.3	7.6	505.1	6.7	508.7	13.1	504.3	7.6	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	98	LG5.1-103	181	7670	0.6	24.0599	30.6	0.0440	31.1	0.0077	5.6	0.18	49.3	2.7	43.7	13.3	-252.9	789.2	49.3	2.7	NA
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	99	LG5.1-104	121	324811	2.5	9.4873	0.5	4.3977	2.5	0.3026	2.5	0.98	1704.2	37.2	1711.9	20.9	1721.4	8.9	1721.4	8.9	99
27.808667	94.717983	LIKABALI	LOWER SIWALIK	LG5.1	100	LG5.1-105	346	209497	1.7	14.9133	0.4	1.2452	1.3	0.1347	1.2	0.96	814.5	9.3	821.2	7.1	839.4	7.3	814.5	9.3	97

27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	1	MS16-1	258	19080	2.1	9.4767	0.5	4.0986	1.0	0.2817	0.9	0.90	1599.9	13.0	1654.0	8.3	1723.4	8.3	1723.4	8.3	93
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	2	MS16-3	64	112223	1.1	5.5947	0.4	11.2256	2.0	0.4555	2.0	0.98	2419.6	40.2	2542.0	19.0	2641.2	6.8	2641.2	6.8	92
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	3	MS16-4	193	86238	1.0	17.2667	2.0	0.6401	2.6	0.0802	1.7	0.65	497.1	8.2	502.4	10.4	526.6	43.5	497.1	8.2	94
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	4	MS16-5	292	300605	1.5	9.8464	0.2	4.0193	3.4	0.2870	3.4	1.00	1626.7	49.4	1638.1	28.0	1652.8	3.1	1652.8	3.1	98
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	5	MS16-6	169	149722	61.5	14.0993	1.0	1.5162	1.7	0.1550	1.4	0.80	929.2	11.9	936.9	10.5	955.3	20.8	929.2	11.9	97
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	6	MS16-7	45	51497	0.7	12.3958	2.2	2.2048	2.4	0.1982	0.9	0.37	1165.7	9.3	1182.6	16.6	1213.5	43.4	1213.5	43.4	96
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	7	MS16-8	360	231331	1.7	16.9370	1.1	0.7045	1.7	0.0865	1.3	0.74	535.0	6.5	541.5	7.1	568.7	25.0	535.0	6.5	94
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	8	MS16-9	58	3776	1.6	38.6493	89.5	0.0528	90.1	0.0148	10.6	0.12	94.8	9.9	52.3	45.9	NA	NA	94.8	9.9	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	9	MS16-10	59	45428	0.6	13.1633	1.3	1.9511	1.7	0.1863	1.1	0.65	1101.1	11.3	1098.8	11.5	1094.3	26.3	1094.3	26.3	101
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	10	MS16-11	3220	48429	1.5	15.4428	0.5	1.1090	13.7	0.1242	13.7	1.00	754.7	97.7	757.7	73.4	766.4	10.9	754.7	97.7	98
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	11	MS16-12	595	1358218	5.2	13.4694	0.3	1.7275	1.5	0.1688	1.5	0.98	1005.3	13.5	1018.8	9.6	1048.1	6.6	1048.1	6.6	96
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	12	MS16-13	802	629861	5.8	16.8521	0.3	0.7298	1.1	0.0892	1.0	0.95	550.8	5.5	556.4	4.7	579.6	7.6	550.8	5.5	95
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	13	MS16-14	526	213365	1.8	10.1375	0.2	3.7631	1.0	0.2767	0.9	0.97	1574.6	13.1	1584.9	7.7	1598.6	4.1	1598.6	4.1	98
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	14	MS16-15	740	16593	1.0	20.8386	3.9	0.0573	4.2	0.0087	1.6	0.39	55.5	0.9	56.5	2.3	98.7	91.5	55.5	0.9	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	15	MS16-16	90	6426	1.3	25.0211	65.6	0.0470	66.2	0.0085	8.8	0.13	54.7	4.8	46.6	30.2	-353.1	1892.8	54.7	4.8	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	16	MS16-17	165	43465	1.5	17.5414	3.4	0.6326	4.5	0.0805	3.0	0.66	499.0	14.3	497.7	17.9	491.9	75.6	499.0	14.3	101
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	17	MS16-18	121	13503	0.8	12.9654	3.5	1.9847	4.3	0.1866	2.4	0.57	1103.1	24.7	1110.3	28.9	1124.5	70.1	1124.5	70.1	98
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	18	MS16-19	67	22838	0.4	16.7828	5.5	0.7599	5.8	0.0925	1.8	0.32	570.3	10.0	574.0	25.5	588.5	119.7	570.3	10.0	97
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	19	MS16-20	38	8280	0.6	17.7651	10.9	0.5357	11.1	0.0690	2.4	0.22	430.3	10.0	435.6	39.5	463.9	241.7	430.3	10.0	93
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	20	MS16-21	29	73011	0.7	6.4131	2.1	9.4425	5.0	0.4392	4.5	0.91	2347.0	89.4	2382.0	45.8	2412.0	34.9	2412.0	34.9	97
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	21	MS16-22	224	58375	1.1	10.1688	0.3	3.4771	2.4	0.2564	2.4	0.99	1471.6	31.7	1522.0	19.2	1592.9	5.8	1592.9	5.8	92
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	22	MS16-23	57	234589	0.7	4.2840	0.3	18.3038	2.0	0.5687	2.0	0.99	2902.5	46.2	3005.8	19.2	3075.7	4.2	3075.7	4.2	94
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	23	MS16-24	63	60154	0.5	12.5126	1.8	2.1253	7.5	0.1929	7.3	0.97	1136.9	75.9	1157.1	51.8	1195.0	35.4	1195.0	35.4	95
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	24	MS16-25	142	17850	1.1	28.8951	21.5	0.0697	21.8	0.0146	3.7	0.17	93.5	3.4	68.4	14.4	-740.1	607.9	93.5	3.4	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	25	MS16-26	64	46952	1.8	11.5178	1.5	2.7607	1.8	0.2306	1.0	0.53	1337.7	11.7	1345.0	13.6	1356.5	29.7	1356.5	29.7	99
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	26	MS16-27	250	102539	2.0	17.2357	1.6	0.6378	3.0	0.0797	2.5	0.85	494.5	12.1	500.9	11.8	530.5	34.1	494.5	12.1	93
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	27	MS16-28	309	323953	1.3	13.3199	0.6	1.7857	6.0	0.1725	6.0	0.99	1025.9	56.7	1040.2	39.1	1070.6	12.2	1070.6	12.2	96
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	28	MS16-31	514	25281	3.2	16.9015	1.0	0.7012	3.2	0.0860	3.0	0.95	531.6	15.4	539.5	13.3	573.2	20.9	531.6	15.4	93
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	29	MS16-32	387	55808	0.8	17.2829	1.6	0.6698	2.9	0.0840	2.4	0.83	519.7	12.0	520.6	11.8	524.5	35.5	519.7	12.0	99
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	30	MS16-33	237	8394	0.9	17.2446	1.8	0.6479	2.5	0.0810	1.7	0.69	502.3	8.2	507.2	9.8	529.4	38.8	502.3	8.2	95
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	31	MS16-35	435	235853	1.8	14.9766	0.5	1.2618	1.3	0.1371	1.2	0.93	828.0	9.2	828.7	7.2	830.6	9.6	828.0	9.2	100
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	32	MS16-36	57	4846	5.0	20.6345	20.7	0.4118	25.3	0.0616	14.6	0.57	385.5	54.5	350.2	75.2	121.9	493.4	385.5	54.5	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	33	MS16-37	62	4142	0.8	20.5426	43.6	0.0970	44.3	0.0145	7.5	0.17	92.5	6.8	94.0	39.7	132.4	1072.3	92.5	6.8	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	34	MS16-38	136	107983	1.7	15.0841	1.1	1.2379	1.8	0.1354	1.4	0.79	818.7	10.9	817.9	10.0	815.7	22.8	818.7	10.9	100
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	35	MS16-39	262	151301	0.8	16.1466	0.7	0.9001	1.4	0.1054	1.2	0.88	646.0	7.5	651.8	6.7	671.8	14.0	646.0	7.5	96
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	36	MS16-40	62	125995	1.4	3.6273	1.3	21.9267	3.7	0.5768	3.4	0.93	2935.9	81.1	3180.5	35.7	3338.6	20.5	3338.6	20.5	88
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	37	MS16-41	280	68903	1.0	12.8538	0.7	1.9891	2.0	0.1854	1.9	0.94	1096.6	19.4	1111.8	13.8	1141.7	13.6	1141.7	13.6	96
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	38	MS16-42	282	117034	3.9	11.3421	0.2	2.8313	1.4	0.2329	1.3	0.99	1349.7	16.3	1363.9	10.2	1386.1	4.2	1386.1	4.2	97

27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	39	MS16-43	137	876	1.9	14.6402	38.1	0.0867	38.7	0.0092	6.9	0.18	59.1	4.0	84.4	31.4	877.8	817.9	59.1	4.0	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	40	MS16-44	634	454347	17.8	17.4433	1.0	0.6325	1.7	0.0800	1.4	0.83	496.2	6.9	497.6	6.8	504.2	21.0	496.2	6.9	98
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	41	MS16-45	218	94538	1.5	14.9463	0.8	1.2701	1.7	0.1377	1.5	0.87	831.5	11.8	832.4	9.8	834.8	17.7	831.5	11.8	100
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	42	MS16-46	258	34118	1.7	12.6342	0.7	2.0851	1.4	0.1911	1.2	0.88	1127.1	12.3	1143.9	9.3	1175.9	12.9	1175.9	12.9	96
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	43	MS16-47	434	578336	1.7	12.6210	0.5	2.1483	1.3	0.1966	1.2	0.93	1157.3	12.6	1164.5	8.9	1178.0	9.5	1178.0	9.5	98
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	44	MS16-48	165	147695	2.0	12.1704	1.2	2.2403	1.6	0.1977	1.0	0.65	1163.2	11.0	1193.8	11.1	1249.5	23.6	1249.5	23.6	93
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	45	MS16-49	114	232547	2.8	9.2282	0.4	4.6698	1.9	0.3125	1.9	0.98	1753.2	29.1	1761.9	16.2	1772.1	7.1	1772.1	7.1	99
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	46	MS16-53	151	17896	1.1	10.1139	1.6	3.5831	5.7	0.2628	5.5	0.96	1504.3	73.7	1545.8	45.3	1603.0	29.0	1603.0	29.0	94
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	47	MS16-54	962	15995	4.0	15.7207	1.8	0.3066	4.1	0.0350	3.6	0.89	221.5	7.9	271.5	9.7	728.7	38.9	221.5	7.9	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	48	MS16-55	124	14174	0.8	14.0649	1.7	1.3378	3.8	0.1365	3.5	0.90	824.7	26.8	862.3	22.3	960.3	34.1	824.7	26.8	86
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	49	MS16-56	128	140815	1.2	13.9811	1.4	1.5848	1.9	0.1607	1.3	0.67	960.7	11.5	964.3	11.9	972.4	28.8	960.7	11.5	99
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	50	MS16-57	124	8435	1.1	21.9049	24.0	0.0819	24.3	0.0130	3.4	0.14	83.4	2.8	79.9	18.7	-20.7	589.2	83.4	2.8	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	51	MS16-59	79	106776	0.3	12.7392	2.1	2.2306	2.9	0.2061	2.1	0.72	1208.0	23.3	1190.7	20.7	1159.5	40.7	1159.5	40.7	104
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	52	MS16-60	231	107788	1.8	16.9919	1.2	0.7496	2.3	0.0924	2.0	0.86	569.6	10.7	568.0	9.9	561.6	25.2	569.6	10.7	101
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	53	MS16-61	873	454067	1.2	17.3962	0.5	0.6834	2.4	0.0862	2.3	0.98	533.2	11.8	528.8	9.7	510.1	10.8	533.2	11.8	105
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	54	MS16-63	64	110725	0.7	10.2825	1.4	3.4435	3.1	0.2568	2.7	0.89	1473.5	36.1	1514.4	24.4	1572.1	26.9	1572.1	26.9	94
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	55	MS16-64	135	328031	2.3	4.2200	0.9	18.2437	5.3	0.5584	5.2	0.99	2859.9	119.8	3002.7	50.6	3099.7	13.6	3099.7	13.6	92
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	56	MS16-65	226	252982	2.0	13.4833	0.7	1.7415	3.3	0.1703	3.2	0.98	1013.7	30.2	1024.0	21.2	1046.0	13.2	1046.0	13.2	97
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	57	MS16-66	992	7865	8.0	17.8479	1.1	0.2724	5.6	0.0353	5.5	0.98	223.4	12.0	244.6	12.1	453.5	25.4	223.4	12.0	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	58	MS16-67	525	21500	0.8	22.2896	5.4	0.0586	5.6	0.0095	1.5	0.27	60.7	0.9	57.8	3.1	-63.0	131.1	60.7	0.9	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	59	MS16-68	92	57439	0.6	12.8068	1.4	1.9019	2.7	0.1767	2.3	0.86	1048.7	22.5	1081.8	18.0	1149.0	27.2	1149.0	27.2	91
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	60	MS16-69	39	96363	1.2	12.4621	2.8	2.3083	3.8	0.2086	2.6	0.69	1221.5	29.4	1214.8	27.1	1203.0	54.4	1203.0	54.4	102
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	61	MS16-71	2137	683055	1.6	17.3765	0.3	0.6039	9.0	0.0761	9.0	1.00	472.8	40.8	479.7	34.3	512.6	7.3	472.8	40.8	92
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	62	MS16-72	729	31675	3.9	20.4229	4.6	0.0563	5.3	0.0083	2.7	0.51	53.6	1.4	55.6	2.9	146.2	107.3	53.6	1.4	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	63	MS16-73	56	1675	1.2	20.3343	77.6	0.0562	87.3	0.0083	39.9	0.46	53.2	21.1	55.5	47.1	156.3	2195.5	53.2	21.1	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	64	MS16-74	663	289373	6.7	17.3484	0.7	0.6605	3.9	0.0831	3.8	0.98	514.6	18.9	514.9	15.7	516.2	15.7	514.6	18.9	100
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	65	MS16-75	891	170979	1.0	17.3722	0.4	0.6466	2.2	0.0815	2.1	0.98	504.9	10.3	506.4	8.7	513.2	9.9	504.9	10.3	98
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	66	MS16-76	195	22103	1.0	17.2674	1.5	0.6521	2.4	0.0817	1.9	0.80	506.1	9.4	509.8	9.7	526.5	32.1	506.1	9.4	96
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	67	MS16-77	199	366408	1.1	9.9091	0.5	4.1416	3.3	0.2976	3.3	0.99	1679.6	48.3	1662.5	27.0	1641.0	8.5	1641.0	8.5	102
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	68	MS16-78	116	3200	1.1	19.2591	31.3	0.0576	31.8	0.0080	5.7	0.18	51.6	2.9	56.8	17.6	282.1	732.4	51.6	2.9	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	69	MS16-80	109	99430	2.2	12.3529	1.4	2.2231	2.1	0.1992	1.6	0.76	1170.9	17.0	1188.3	14.7	1220.3	27.0	1220.3	27.0	96
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	70	MS16-81	156	197685	1.9	9.1827	0.3	4.7629	1.3	0.3172	1.2	0.96	1776.1	19.1	1778.4	10.7	1781.1	6.1	1781.1	6.1	100
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	71	MS16-82	303	145836	0.9	11.9343	0.5	2.3293	2.5	0.2016	2.4	0.97	1184.0	25.9	1221.3	17.4	1287.7	10.6	1287.7	10.6	92
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	72	MS16-83	805	360632	1.4	15.0399	0.6	1.1053	4.3	0.1206	4.2	0.99	733.9	29.4	755.9	22.8	821.9	12.3	733.9	29.4	89
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	73	MS16-84	247	50058	1.5	17.1498	1.3	0.6789	2.3	0.0844	1.9	0.83	522.6	9.7	526.1	9.5	541.4	28.2	522.6	9.7	97
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	74	MS16-86	914	25013	0.3	21.0976	2.3	0.0706	2.4	0.0108	0.8	0.35	69.2	0.6	69.2	1.6	69.4	53.7	69.2	0.6	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	75	MS16-87	285	9656	1.2	22.5935	13.5	0.0599	14.6	0.0098	5.3	0.37	62.9	3.3	59.0	8.4	-96.2	333.9	62.9	3.3	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	76	MS16-88	558	30378	2.9	19.3122	1.9	0.2069	2.8	0.0290	2.0	0.71	184.2	3.5	190.9	4.8	275.7	44.5	184.2	3.5	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	77	MS16-89	364	200694	0.7	17.4455	1.2	0.6270	1.8	0.0793	1.3	0.75	492.1	6.3	494.2	6.9	503.9	25.7	492.1	6.3	98
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	78	MS16-90	423	145820	2.2	17.5010	0.6	0.6345	1.1	0.0805	0.9	0.85	499.4	4.6	498.9	4.4	496.9	13.0	499.4	4.6	100
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	79	MS16-91	225	50181	1.4	19.8510	3.4	0.2611	3.8	0.0376	1.7	0.45	237.9	4.1	235.6	8.1	212.3	79.3	237.9	4.1	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	80	MS16-92	428	260166	3.0	14.9702	0.6	1.2467	1.7	0.1354	1.6	0.94	818.4	12.0	821.9	9.4	831.5	11.8	818.4	12.0	98
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	81	MS16-93	147	16265	0.8	10.1686	0.6	3.3776	2.2	0.2491	2.2	0.97	1433.8	27.6	1499.2	17.4	1592.9	10.5	1592.9	10.5	90
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	82	MS16-94	59	26349	1.0	15.5092	3.4	1.0589	3.8	0.1191	1.5	0.40	725.4	10.3	733.3	19.6	757.3	72.6	725.4	10.3	96
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	83	MS16-95	24	19467	1.9	13.2182	4.5	1.7386	5.3	0.1667	2.7	0.51	993.8	24.7	1023.0	34.0	1085.9	91.2	1085.9	91.2	92
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	84	MS16-96	94	4469	1.5	20.4066	18.9	0.0609	21.4	0.0090	10.0	0.47	57.8	5.8	60.0	12.5	148.0	446.8	57.8	5.8	NA
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	85	MS16-97	291	154877	1.9	14.3156	0.8	1.5045	1.9	0.1562	1.8	0.90	935.6	15.3	932.2	11.8	924.1	17.0	935.6	15.3	101
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	86	MS16-98	3199	309994	4.7	17.3597	0.1	0.7685	4.6	0.0968	4.6	1.00	595.4	26.3	578.9	20.4	514.7	2.8	595.4	26.3	116
27.7589	94.71505	LIKABALI	LOWER SIWALIK	LG4.5	87	MS16-100	339	265451	1.8	14.7088	0.6	1.3515	1.6	0.1442	1.5	0.94	868.3	12.5	868.2	9.5	868.1	11.5	868.3	12.5	100

27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	1	KZ3.5-1	291	273068	1.8	14.9159	0.8	1.1830	2.5	0.1280	2.4	0.95	776.3	17.3	792.7	13.7	839.1	16.6	776.3	17.3	93
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	2	KZ3.5-2	373	240889	1.5	15.0175	0.4	1.2841	1.6	0.1399	1.6	0.98	843.9	12.7	838.7	9.4	824.9	7.5	843.9	12.7	102
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	3	KZ3.5-3	71	5082	1.1	21.6318	28.8	0.0939	29.0	0.0147	4.0	0.14	94.3	3.8	91.2	25.3	9.5	704.7	94.3	3.8	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	4	KZ3.5-4	238	51779	0.6	20.3110	5.8	0.2105	5.8	0.0310	1.1	0.18	196.8	2.1	194.0	10.3	159.0	134.7	196.8	2.1	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	5	KZ3.5-5	1237	4969	1.8	19.5121	8.8	0.0334	11.1	0.0047	6.6	0.60	30.4	2.0	33.4	3.6	252.1	203.5	30.4	2.0	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	6	KZ3.5-6	586	411080	3.1	17.3830	0.3	0.6702	3.3	0.0845	3.3	1.00	522.9	16.6	520.9	13.6	511.8	7.2	522.9	16.6	102
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	7	KZ3.5-7	392	257669	1.5	17.2545	1.0	0.6594	1.9	0.0825	1.7	0.85	511.2	8.2	514.3	7.9	528.1	22.3	511.2	8.2	97
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	8	KZ3.5-8	502	35321	2.0	9.2733	0.4	3.9032	3.6	0.2625	3.5	0.99	1502.7	47.3	1614.3	28.7	1763.2	8.1	1763.2	8.1	85
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	9	KZ3.5-9	998	260765	2.9	17.4121	0.5	0.6307	1.2	0.0796	1.0	0.88	494.0	4.8	496.5	4.5	508.2	11.9	494.0	4.8	97
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	10	KZ3.5-10	132	115758	0.8	14.0760	0.6	1.4172	2.6	0.1447	2.5	0.97	871.1	20.2	896.2	15.3	958.6	13.1	871.1	20.2	91
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	11	KZ3.5-11	126	143126	1.3	10.6642	0.9	2.9811	6.5	0.2306	6.4	0.99	1337.5	77.6	1402.8	49.4	1503.5	17.5	1503.5	17.5	89
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	12	KZ3.5-13	58	78585	0.8	10.1923	0.7	3.4767	1.8	0.2570	1.7	0.93	1474.5	22.0	1522.0	14.1	1588.6	12.3	1588.6	12.3	93
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	13	KZ3.5-14	127	137172	1.3	12.6420	0.9	2.1840	2.4	0.2003	2.2	0.92	1176.7	24.0	1176.0	16.8	1174.7	18.5	1174.7	18.5	100
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	14	KZ3.5-15	184	212888	1.1	12.3874	0.6	2.2441	3.8	0.2016	3.8	0.99	1184.0	41.0	1195.0	27.0	1214.8	11.8	1214.8	11.8	98
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	15	KZ3.5-17	17	2286	1.1	6.9509	245.4	0.4266	246.5	0.0215	24.0	0.10	137.2	32.5	360.7	958.8	2274.3	123.6	137.2	32.5	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	16	KZ3.5-18	979	543219	25.2	14.9109	0.2	1.2823	1.1	0.1387	1.1	0.99	837.1	8.7	837.9	6.4	839.8	3.7	837.1	8.7	100
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	17	KZ3.5-19	108	94716	0.8	15.6809	1.7	1.0283	2.2	0.1169	1.5	0.67	713.0	10.0	718.1	11.4	734.1	35.1	713.0	10.0	97
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	18	KZ3.5-20	342	15316	2.1	17.0855	2.5	0.6344	3.0	0.0786	1.7	0.56	487.8	7.9	498.8	11.8	549.6	53.8	487.8	7.9	89
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	19	KZ3.5-21	236	245626	1.5	15.0688	0.9	1.2676	3.0	0.1385	2.9	0.96	836.4	22.9	831.3	17.3	817.8	18.5	836.4	22.9	102
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	20	KZ3.5-22	86	5775	0.9	28.2477	28.1	0.0673	28.9	0.0138	6.7	0.23	88.2	5.8	66.1	18.5	-677.0	789.6	88.2	5.8	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	21	KZ3.5-23	495	360130	1.8	17.3243	1.1	0.6269	2.3	0.0788	2.0	0.89	488.8	9.6	494.2	9.0	519.2	23.2	488.8	9.6	94
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	22	KZ3.5-24	333	539593	4.3	14.3620	0.6	1.4406	3.8	0.1501	3.8	0.99	901.3	31.8	906.0	22.9	917.4	11.7	901.3	31.8	98
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	23	KZ3.5-25	29	294631	1.1	4.9281	0.5	14.5500	3.2	0.5200	3.2	0.99	2699.4	70.6	2786.3	30.8	2849.8	7.9	2849.8	7.9	95
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	24	KZ3.5-26	878	33773	23.4	21.2474	3.9	0.0399	4.5	0.0062	2.3	0.50	39.6	0.9	39.8	1.7	52.5	92.4	39.6	0.9	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	25	KZ3.5-27	171	7812	4.7	22.3219	14.4	0.0729	14.5	0.0118	1.7	0.12	75.7	1.3	71.5	10.0	-66.5	352.6	75.7	1.3	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	26	KZ3.5-28	351	95226	1.5	17.4671	1.4	0.6003	3.5	0.0760	3.2	0.91	472.5	14.6	477.4	13.3	501.2	31.2	472.5	14.6	94
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	27	KZ3.5-29	612	11143	0.8	11.3528	0.3	1.7916	4.7	0.1475	4.7	1.00	887.0	38.9	1042.4	30.7	1384.3	5.1	1384.3	5.1	64
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	28	KZ3.5-30	351	39268	1.3	16.5726	0.7	0.8126	1.6	0.0977	1.4	0.90	600.8	8.0	603.9	7.1	615.8	14.8	600.8	8.0	98
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	29	KZ3.5-31	2130	28578	1.5	20.9054	2.3	0.0587	2.7	0.0089	1.3	0.48	57.1	0.7	57.9	1.5	91.1	55.3	57.1	0.7	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	30	KZ3.5-32	259	670270	0.9	9.7858	0.3	3.7312	2.5	0.2648	2.5	0.99	1514.4	33.7	1578.1	20.2	1664.2	6.3	1664.2	6.3	91
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	31	KZ3.5-33	189	34511	1.6	17.0165	2.2	0.6411	2.6	0.0791	1.4	0.54	490.9	6.7	503.0	10.5	558.5	48.5	490.9	6.7	88
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	32	KZ3.5-34	2160	174950	1.0	13.8454	0.1	1.5147	1.6	0.1521	1.6	1.00	912.7	13.7	936.3	9.9	992.3	1.8	912.7	13.7	92
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	33	KZ3.5-35	2634	198382	19.1	10.7995	3.6	2.9181	17.1	0.2286	16.8	0.98	1327.0	201.0	1386.6	130.3	1479.6	67.8	1479.6	67.8	90
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	34	KZ3.5-36	75	165967	1.3	4.9215	0.3	14.8555	2.3	0.5303	2.2	0.99	2742.5	50.2	2806.0	21.6	2852.0	4.7	2852.0	4.7	96
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	35	KZ3.5-37	330	265124	1.8	10.0770	0.2	3.4425	1.2	0.2516	1.2	0.99	1446.7	15.0	1514.2	9.2	1609.8	3.5	1609.8	3.5	90
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	36	KZ3.5-38	559	202080	1.5	17.5123	0.7	0.5946	2.8	0.0755	2.7	0.97	469.4	12.1	473.8	10.4	495.5	15.5	469.4	12.1	95
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	37	KZ3.5-39	121	22209	0.6	10.0329	0.7	3.6351	4.3	0.2645	4.3	0.99	1512.9	57.4	1557.3	34.4	1618.0	12.6	1618.0	12.6	94
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	38	KZ3.5-41	123	72450	1.5	17.4646	3.0	0.6321	3.4	0.0801	1.6	0.47	496.5	7.7	497.4	13.3	501.5	65.8	496.5	7.7	99
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	39	KZ3.5-42	54	7181	1.6	16.6478	31.4	0.1387	32.2	0.0167	7.1	0.22	107.0	7.5	131.8	39.9	606.0	695.9	107.0	7.5	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	40	KZ3.5-43	188	200717	0.7	13.5509	0.6	1.7894	2.1	0.1759	2.1	0.96	1044.3	19.8	1041.6	13.9	1035.9	11.9	1035.9	11.9	101
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	41	KZ3.5-44	101	42871	1.2	7.3109	0.4	7.4704	2.8	0.3961	2.8	0.99	2151.1	50.5	2169.4	24.9	2186.8	6.2	2186.8	6.2	98
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	42	KZ3.5-45	61	178450	1.5	4.9657	0.4	15.1092	5.7	0.5442	5.7	1.00	2800.8	129.7	2822.1	54.5	2837.4	6.7	2837.4	6.7	99
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	43	KZ3.5-46	813	119472	1.7	15.1493	2.7	0.8871	6.7	0.0975	6.2	0.92	599.5	35.4	644.8	32.1	806.7	55.6	599.5	35.4	74

27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	44	KZ3.5-47	218	27676	0.9	10.0544	0.3	3.3142	6.9	0.2417	6.9	1.00	1395.4	86.8	1484.4	54.1	1614.0	5.2	1614.0	5.2	87
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	45	KZ3.5-48	412	160468	0.6	12.1636	0.3	2.2946	4.8	0.2024	4.8	1.00	1188.4	52.4	1210.6	34.2	1250.6	5.8	1250.6	5.8	95
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	46	KZ3.5-49	1103	521725	15.9	5.4922	0.1	12.9686	3.1	0.5166	3.1	1.00	2684.6	67.1	2677.4	28.8	2671.9	1.4	2671.9	1.4	101
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	47	KZ3.5-50	81	92443	1.1	9.8732	0.8	4.0186	1.5	0.2878	1.3	0.85	1630.3	18.9	1638.0	12.5	1647.8	15.0	1647.8	15.0	99
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	48	KZ3.5-51	1263	649072	3.9	17.3703	0.4	0.6609	1.4	0.0833	1.3	0.95	515.5	6.7	515.2	5.7	513.4	9.6	515.5	6.7	100
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	49	KZ3.5-52	210	148937	2.0	10.5548	2.2	2.8192	4.7	0.2158	4.2	0.89	1259.7	47.7	1360.7	35.3	1523.0	40.9	1523.0	40.9	83
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	50	KZ3.5-53	79	8168	3.0	21.5193	12.0	0.1071	12.6	0.0167	3.7	0.30	106.9	4.0	103.3	12.4	22.1	290.1	106.9	4.0	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	51	KZ3.5-55	109	25300	0.5	17.3804	4.7	0.6204	5.4	0.0782	2.6	0.49	485.4	12.4	490.1	21.1	512.2	104.1	485.4	12.4	95
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	52	KZ3.5-56	443	112226	2.8	11.3456	2.0	2.2428	5.1	0.1846	4.7	0.92	1091.8	47.7	1194.5	36.2	1385.5	38.3	1385.5	38.3	79
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	53	KZ3.5-57	123	17650	6.4	15.9407	8.4	0.6471	13.8	0.0748	10.9	0.79	465.1	49.0	506.7	55.1	699.2	179.5	465.1	49.0	67
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	54	KZ3.5-59	659	12778	2.3	13.4288	0.4	1.2884	2.9	0.1255	2.9	0.99	762.0	20.6	840.6	16.5	1054.2	8.0	762.0	20.6	72
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	55	KZ3.5-60	115	204835	1.7	9.2408	0.3	4.7864	2.5	0.3208	2.5	0.99	1793.6	39.1	1782.5	21.1	1769.6	5.2	1769.6	5.2	101
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	56	KZ3.5-61	2524	117043	4.7	12.3192	0.2	1.9846	7.8	0.1773	7.8	1.00	1052.3	75.3	1110.3	52.4	1225.7	4.1	1225.7	4.1	86
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	57	KZ3.5-62	50	2430	1.0	17.4894	19.8	0.1251	21.8	0.0159	9.0	0.41	101.5	9.0	119.7	24.6	498.4	440.5	101.5	9.0	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	58	KZ3.5-63	44	15558	0.7	17.3878	8.9	0.6825	9.5	0.0861	3.5	0.36	532.2	17.7	528.3	39.3	511.2	195.4	532.2	17.7	104
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	59	KZ3.5-64	98	38924	0.4	10.5425	1.8	3.1744	5.9	0.2427	5.6	0.95	1400.8	70.7	1450.9	45.5	1525.2	33.6	1525.2	33.6	92
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	60	KZ3.5-65	125	3616	1.0	25.0334	36.7	0.0495	37.1	0.0090	5.9	0.16	57.7	3.4	49.1	17.8	-354.4	974.8	57.7	3.4	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	61	KZ3.5-66	392	266222	2.0	17.4366	1.3	0.6462	2.3	0.0817	1.9	0.84	506.4	9.5	506.1	9.3	505.0	28.2	506.4	9.5	100
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	62	KZ3.5-67	494	67604	1.4	4.1636	0.7	15.2581	5.2	0.4607	5.1	0.99	2442.9	104.6	2831.5	49.4	3121.1	10.6	3121.1	10.6	78
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	63	KZ3.5-68	362	38335	5.0	9.8970	0.3	3.9676	2.1	0.2848	2.0	0.99	1615.5	29.2	1627.6	16.7	1643.3	5.1	1643.3	5.1	98
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	64	KZ3.5-69	109	7100	1.6	22.9545	15.0	0.0834	15.4	0.0139	3.3	0.22	88.9	2.9	81.3	12.0	-135.2	373.0	88.9	2.9	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	65	KZ3.5-70	43	60921	0.8	11.1050	1.5	3.0361	7.1	0.2445	7.0	0.98	1410.2	88.3	1416.7	54.5	1426.6	28.6	1426.6	28.6	99
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	66	KZ3.5-71	138	94747	0.4	9.3706	0.3	4.4094	1.7	0.2997	1.7	0.99	1689.7	25.3	1714.1	14.3	1744.1	4.9	1744.1	4.9	97
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	67	KZ3.5-72	1017	254028	10.2	8.8108	0.2	5.0040	4.5	0.3198	4.5	1.00	1788.6	70.8	1820.0	38.4	1856.1	2.8	1856.1	2.8	96
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	68	KZ3.5-73	58	32827	0.6	17.5790	3.7	0.6424	4.1	0.0819	1.6	0.39	507.5	7.6	503.8	16.1	487.1	82.7	507.5	7.6	104
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	69	KZ3.5-74	95	41677	0.9	17.6342	5.0	0.6164	5.9	0.0788	3.2	0.54	489.2	15.0	487.6	22.9	480.2	110.6	489.2	15.0	102
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	70	KZ3.5-75	648	556527	1.3	13.7516	0.5	1.7035	2.7	0.1699	2.7	0.98	1011.5	24.8	1009.8	17.3	1006.1	10.3	1006.1	10.3	101
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	71	KZ3.5-76	152	245891	1.6	10.4639	0.6	2.6979	2.0	0.2048	1.9	0.96	1200.8	21.3	1327.9	15.1	1539.2	11.3	1539.2	11.3	78
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	72	KZ3.5-77	442	14333	1.2	13.8952	2.5	1.2521	5.0	0.1262	4.4	0.87	766.1	31.5	824.4	28.3	985.0	50.1	766.1	31.5	78
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	73	KZ3.5-79	148	128320	3.0	14.6349	1.1	1.1638	4.2	0.1235	4.0	0.97	750.8	28.7	783.7	22.9	878.6	21.9	750.8	28.7	86
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	74	KZ3.5-81	870	520924	6.2	17.3517	0.6	0.6598	2.3	0.0830	2.2	0.97	514.2	11.1	514.5	9.3	515.8	12.5	514.2	11.1	100
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	75	KZ3.5-83	1452	52197	2.2	21.3179	3.6	0.0637	10.9	0.0098	10.3	0.94	63.2	6.4	62.7	6.6	44.6	85.1	63.2	6.4	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	76	KZ3.5-84	294	497633	13.5	12.2846	0.4	2.1995	3.1	0.1960	3.1	0.99	1153.6	32.3	1180.9	21.5	1231.2	8.3	1231.2	8.3	94
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	77	KZ3.5-85	68	87759	0.7	13.2730	1.5	1.8905	2.4	0.1820	1.8	0.78	1077.8	18.2	1077.8	15.7	1077.6	29.7	1077.6	29.7	100
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	78	KZ3.5-86	43	3655	1.9	16.5927	32.3	0.1329	32.6	0.0160	4.4	0.14	102.3	4.5	126.7	38.8	613.2	714.9	102.3	4.5	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	79	KZ3.5-87	123	149153	0.9	12.7617	1.0	2.1359	2.7	0.1977	2.5	0.92	1162.9	26.3	1160.5	18.5	1156.0	20.6	1156.0	20.6	101
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	80	KZ3.5-88	372	404501	0.9	9.9846	0.2	3.7230	3.5	0.2696	3.4	1.00	1538.8	47.2	1576.3	27.7	1626.9	4.5	1626.9	4.5	95
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	81	KZ3.5-89	24	1649	1.5	22.6776	66.8	0.0814	68.2	0.0134	13.8	0.20	85.7	11.7	79.5	52.2	-105.3	1849.4	85.7	11.7	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	82	KZ3.5-90	18	108689	0.4	3.8090	0.6	24.1108	3.4	0.6661	3.3	0.98	3290.7	86.2	3272.9	33.1	3262.0	9.3	3262.0	9.3	101
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	83	KZ3.5-91	456	242841	1.3	12.5401	0.4	2.2281	2.5	0.2026	2.4	0.98	1189.5	26.4	1189.9	17.3	1190.7	8.5	1190.7	8.5	100
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	84	KZ3.5-93	87	30846	1.4	13.6473	2.2	1.5612	3.3	0.1545	2.4	0.74	926.3	21.0	954.9	20.3	1021.5	44.4	926.3	21.0	91
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	85	KZ3.5-94	77	36850	1.2	13.8117	1.3	1.7099	2.2	0.1713	1.7	0.79	1019.2	16.0	1012.2	13.9	997.3	27.2	997.3	27.2	102
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	86	KZ3.5-95	405	19846	0.3	10.1720	0.4	3.3802	16.4	0.2494	16.4	1.00	1435.2	210.5	1499.8	128.9	1592.3	7.7	1592.3	7.7	90
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	87	KZ3.5-96	552	75485	1.9	17.5636	1.4	0.3469	3.7	0.0442	3.4	0.93	278.8	9.3	302.4	9.6	489.0	30.0	278.8	9.3	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	88	KZ3.5-97	31	3450	1.5	12.0428	101.1	0.1948	101.4	0.0170	7.3	0.07	108.7	7.9	180.7	169.3	1270.1	134.8	108.7	7.9	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	89	KZ3.5-98	106	186336	2.2	11.6332	1.0	2.8308	5.0	0.2388	4.9	0.98	1380.7	60.8	1363.7	37.5	1337.3	19.4	1337.3	19.4	103
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	90	KZ3.5-99	2245	557070	15.3	20.2909	0.9	0.1602	2.6	0.0236	2.4	0.93	150.2	3.6	150.9	3.6	161.3	21.5	150.2	3.6	NA
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	91	KZ3.5-100	55	34323	75.2	17.5140	7.9	0.6540	8.9	0.0831	4.1	0.46	514.4	20.3	510.9	35.8	495.3	174.8	514.4	20.3	104
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	92	KZ3.5-101	345	551156	1.4	9.9353	0.4	3.9576	2.1	0.2852	2.1	0.99	1617.4	29.9	1625.5	17.2	1636.1	6.6	1636.1	6.6	99
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	93	KZ3.5-102	181	77704	0.8	9.9562	0.4	3.7880	2.1	0.2735	2.1	0.99	1558.7	28.8	1590.2	16.9	1632.2	6.5	1632.2	6.5	96
27.347517	93.974467	KIMIN	MIDDLE SIWALIK	KZ3.5	94	KZ3.5-103	102	7422	1.5	21.6471	23.5	0.0663	23.9	0.0104	4.4	0.18	66.7	2.9	65.2	15.1	7.8	571.6	66.7	2.9	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	1	KZ1.5-1	482	216450	0.9	17.5538	0.7	0.6250	3.0	0.0796	2.9	0.97	493.5	13.6	492.9	11.6	490.3	16.0	493.5	13.6	101
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	2	KZ1.5-2	508	39652	0.6	16.5885	1.0	0.7104	2.2	0.0855	1.9	0.90	528.7	9.9	545.0	9.1	613.7	20.8	528.7	9.9	86
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	3	KZ1.5-3	457	145844	2.2	17.3054	0.8	0.6594	1.7	0.0828	1.5	0.87	512.6	7.3	514.2	6.9	521.6	18.2	512.6	7.3	98
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	4	KZ1.5-4	106	6761	0.6	18.2247	16.8	0.1163	18.2	0.0154	7.1	0.39	98.3	7.0	111.7	19.3	406.9	378.1	98.3	7.0	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	5	KZ1.5-5	1806	542528	2.7	17.5468	0.3	0.6161	0.9	0.0784	0.8	0.94	486.6	3.9	487.4	3.4	491.1	6.4	486.6	3.9	99
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	6	KZ1.5-7	106	7184	1.4	21.3006	26.6	0.0845	26.7	0.0131	3.0	0.11	83.6	2.5	82.4	21.2	46.5	644.9	83.6	2.5	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	7	KZ1.5-9	98	104014	1.5	11.6556	1.5	2.7937	5.1	0.2362	4.9	0.96	1366.7	59.9	1353.8	38.0	1333.6	28.3	1333.6	28.3	102
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	8	KZ1.5-10	594	20178	4.7	21.3128	7.3	0.0565	7.4	0.0087	1.2	0.16	56.0	0.7	55.8	4.0	45.1	175.6	56.0	0.7	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	9	KZ1.5-13	469	14777	1.2	21.0707	10.0	0.0568	10.5	0.0087	3.4	0.32	55.7	1.9	56.1	5.8	72.4	237.9	55.7	1.9	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	10	KZ1.5-14	498	473406	1.0	12.1341	0.4	2.3563	2.2	0.2074	2.2	0.98	1214.8	24.1	1229.5	15.8	1255.3	8.2	1255.3	8.2	97
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	11	KZ1.5-15	9	2091	0.5	12.5549	11.9	2.1599	12.1	0.1967	2.2	0.18	1157.4	23.0	1168.2	83.8	1188.4	234.9	1188.4	234.9	97
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	12	KZ1.5-17	68	91775	1.1	9.9344	0.9	3.8794	1.7	0.2795	1.5	0.86	1588.9	21.0	1609.4	14.1	1636.3	16.7	1636.3	16.7	97
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	13	KZ1.5-19	503	65239	1.8	16.9055	3.7	0.6690	4.1	0.0820	1.6	0.39	508.2	7.8	520.1	16.6	572.7	81.4	508.2	7.8	89
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	14	KZ1.5-20	210	5594	0.6	22.0829	32.0	0.0297	32.3	0.0048	4.8	0.15	30.6	1.5	29.7	9.5	-40.3	794.3	30.6	1.5	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	15	KZ1.5-21	659	290721	4.5	6.1881	0.6	10.2440	2.7	0.4598	2.6	0.98	2438.5	53.5	2457.1	24.9	2472.5	9.5	2472.5	9.5	99
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	16	KZ1.5-22	52	3598	0.7	38.4403	82.7	0.0527	83.1	0.0147	8.8	0.11	94.1	8.2	52.2	42.3	NA	NA	94.1	8.2	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	17	KZ1.5-23	22	209	1.1	15.9271	59.7	0.1169	60.5	0.0135	9.9	0.16	86.5	8.5	112.3	64.4	701.0	1402.8	86.5	8.5	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	18	KZ1.5-25	38	3753	1.4	16.9307	42.3	0.1164	44.0	0.0143	12.2	0.28	91.5	11.0	111.8	46.6	569.5	962.6	91.5	11.0	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	19	KZ1.5-26	168	55307	0.9	13.5041	1.3	1.4381	2.8	0.1409	2.5	0.89	849.5	20.1	904.9	17.0	1042.9	25.9	849.5	20.1	81
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	20	KZ1.5-27	246	219122	2.5	12.1860	3.9	0.9778	11.3	0.0864	10.6	0.94	534.3	54.2	692.5	56.6	1247.0	76.1	534.3	54.2	43
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	21	KZ1.5-29	82	61477	1.2	14.2360	0.9	1.4674	1.9	0.1515	1.7	0.89	909.4	14.2	917.0	11.3	935.5	17.6	909.4	14.2	97
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	22	KZ1.5-30	65	21838	1.1	20.4581	28.1	0.1632	28.4	0.0242	4.1	0.14	154.2	6.2	153.5	40.5	142.1	671.4	154.2	6.2	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	23	KZ1.5-31	136	158863	1.1	9.4247	0.5	4.5946	1.6	0.3141	1.6	0.94	1760.7	23.9	1748.3	13.7	1733.5	9.9	1733.5	9.9	102
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	24	KZ1.5-32	956	24578	0.9	7.4752	0.2	4.2788	1.1	0.2320	1.1	0.98	1344.8	13.1	1689.3	9.0	2148.1	3.6	2148.1	3.6	63
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	25	KZ1.5-33	97	214532	1.6	3.9997	0.5	20.3622	1.6	0.5907	1.6	0.95	2992.2	37.4	3108.7	15.9	3184.9	7.9	3184.9	7.9	94
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	26	KZ1.5-34	2071	124392	11.2	15.0877	0.2	1.1200	1.7	0.1226	1.7	0.99	745.3	11.9	763.0	9.2	815.2	4.1	745.3	11.9	91
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	27	KZ1.5-35	855	561210	1.2	17.3452	0.4	0.6598	1.5	0.0830	1.4	0.97	514.0	7.1	514.5	6.0	516.6	8.1	514.0	7.1	100
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	28	KZ1.5-36	92	91547	0.6	12.7671	1.2	2.1134	3.0	0.1957	2.8	0.92	1152.1	29.3	1153.2	20.8	1155.1	23.4	1155.1	23.4	100
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	29	KZ1.5-37	483	163786	2.5	17.5586	0.7	0.5949	1.4	0.0758	1.2	0.86	470.8	5.5	474.0	5.3	489.7	15.6	470.8	5.5	96
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	30	KZ1.5-38	449	328166	1.1	12.7354	0.3	1.9223	2.2	0.1776	2.1	0.99	1053.6	20.8	1088.9	14.4	1160.1	5.2	1160.1	5.2	91
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	31	KZ1.5-39	315	125420	1.8	17.4910	0.8	0.6409	3.0	0.0813	2.9	0.96	503.9	13.9	502.9	11.8	498.2	18.1	503.9	13.9	101
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	32	KZ1.5-40	671	382217	3.1	12.2277	5.8	1.0872	8.6	0.0964	6.4	0.75	593.4	36.5	747.2	45.7	1240.3	112.8	593.4	36.5	48
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	33	KZ1.5-42	333	120375	1.0	17.1444	1.2	0.6903	4.9	0.0858	4.7	0.97	530.9	24.2	533.0	20.3	542.1	26.4	530.9	24.2	98
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	34	KZ1.5-43	1070	138846	15.0	20.1368	0.8	0.1786	2.6	0.0261	2.5	0.95	166.0	4.0	166.9	4.0	179.1	18.2	166.0	4.0	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	35	KZ1.5-44	187	163454	1.5	17.3272	1.3	0.6489	2.0	0.0815	1.5	0.77	505.4	7.5	507.8	8.0	518.9	27.8	505.4	7.5	97
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	36	KZ1.5-45	116	285110	1.3	13.7266	1.1	1.6884	1.8	0.1681	1.4	0.77	1001.6	12.6	1004.2	11.3	1009.8	23.0	1009.8	23.0	99
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	37	KZ1.5-46	33	14187	0.6	13.5098	3.6	1.4967	5.2	0.1466	3.8	0.73	882.1	31.0	929.0	31.5	1042.0	71.9	882.1	31.0	85
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	38	KZ1.5-47	100	6085	0.9	20.8209	23.9	0.0903	24.3	0.0136	4.4	0.18	87.3	3.8	87.8	20.4	100.7	571.7	87.3	3.8	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	39	KZ1.5-48	67	112885	0.7	9.8694	1.0	4.0877	2.0	0.2926	1.8	0.87	1654.5	25.9	1651.8	16.6	1648.5	18.7	1648.5	18.7	100
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	40	KZ1.5-49	162	178530	0.9	15.5566	1.9	1.0771	3.1	0.1215	2.5	0.81	739.4	17.7	742.2	16.6	750.9	39.1	739.4	17.7	98
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	41	KZ1.5-50	105	7421	0.8	19.6610	16.9	0.0930	17.2	0.0133	3.3	0.19	84.9	2.8	90.3	14.9	234.6	392.7	84.9	2.8	NA

27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	42	KZ1.5-51	1713	91185	3.5	17.3157	0.8	0.6104	5.4	0.0767	5.3	0.99	476.1	24.5	483.8	20.8	520.3	17.7	476.1	24.5	92
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	43	KZ1.5-52	84	162521	1.4	10.0750	0.9	3.8992	2.0	0.2849	1.7	0.89	1616.1	24.9	1613.5	15.9	1610.2	17.1	1610.2	17.1	100
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	44	KZ1.5-55	35	70626	1.4	10.9104	1.9	3.2215	3.0	0.2549	2.3	0.77	1463.8	29.7	1462.4	22.9	1460.3	36.1	1460.3	36.1	100
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	45	KZ1.5-56	26	782	1.0	11.1539	28.2	0.2597	30.2	0.0210	10.7	0.36	134.0	14.2	234.5	63.2	1418.2	549.9	134.0	14.2	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	46	KZ1.5-57	410	373424	31.7	11.4704	0.3	2.6080	1.8	0.2170	1.8	0.99	1265.8	21.0	1302.9	13.6	1364.5	5.5	1364.5	5.5	93
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	47	KZ1.5-58	96	95215	1.0	13.9863	2.1	1.6036	3.8	0.1627	3.2	0.83	971.5	29.0	971.6	24.1	971.7	43.3	971.5	29.0	100
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	48	KZ1.5-59	71	47315	0.9	12.7810	0.9	2.1556	2.0	0.1998	1.8	0.88	1174.4	19.1	1166.9	14.0	1153.0	18.8	1153.0	18.8	102
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	49	KZ1.5-60	137	5823	2.1	22.3204	19.8	0.0611	20.0	0.0099	2.8	0.14	63.4	1.8	60.2	11.7	-66.4	486.8	63.4	1.8	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	50	KZ1.5-61	579	9126	0.8	24.0615	17.5	0.0337	18.3	0.0059	5.3	0.29	37.8	2.0	33.7	6.1	-253.1	445.8	37.8	2.0	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	51	KZ1.5-62	1159	58770	6.3	20.9971	3.8	0.0613	4.3	0.0093	1.9	0.45	59.9	1.1	60.4	2.5	80.7	91.3	59.9	1.1	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	52	KZ1.5-63	497	4398	0.5	22.2304	16.9	0.0253	17.5	0.0041	4.3	0.25	26.3	1.1	25.4	4.4	-56.5	415.2	26.3	1.1	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	53	KZ1.5-64	453	371510	2.2	16.3684	0.8	0.8848	1.9	0.1050	1.7	0.90	643.9	10.2	643.6	8.8	642.5	17.7	643.9	10.2	100
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	54	KZ1.5-66	192	107616	1.7	14.9870	0.7	1.2447	1.5	0.1353	1.3	0.89	818.0	10.2	821.0	8.4	829.2	14.4	818.0	10.2	99
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	55	KZ1.5-67	147	79823	0.6	12.4162	0.6	2.2713	1.7	0.2045	1.6	0.94	1199.6	17.0	1203.4	11.7	1210.3	11.4	1210.3	11.4	99
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	56	KZ1.5-68	79	6079	1.3	21.9727	36.2	0.0847	36.7	0.0135	5.6	0.15	86.4	4.8	82.6	29.1	-28.2	904.0	86.4	4.8	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	57	KZ1.5-69	146	111966	0.6	17.2040	2.1	0.6876	3.1	0.0858	2.2	0.73	530.6	11.4	531.3	12.7	534.5	46.4	530.6	11.4	99
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	58	KZ1.5-70	88	43571	0.3	16.4232	3.3	0.7790	4.9	0.0928	3.6	0.74	572.0	19.8	584.9	21.7	635.3	70.2	572.0	19.8	90
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	59	KZ1.5-71	804	745529	5.9	13.7535	0.2	1.6244	1.3	0.1620	1.3	0.99	968.1	11.3	979.7	8.0	1005.8	3.5	968.1	11.3	96
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	60	KZ1.5-72	73	8369	1.3	24.1084	27.0	0.0831	27.4	0.0145	4.4	0.16	93.0	4.1	81.1	21.3	-258.0	695.8	93.0	4.1	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	61	KZ1.5-73	29	17662	0.6	16.7781	8.5	0.6654	9.8	0.0810	4.9	0.50	501.9	23.5	517.9	39.6	589.1	183.9	501.9	23.5	85
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	62	KZ1.5-75	173	92738	2.2	15.0724	0.9	0.9289	2.1	0.1015	1.9	0.91	623.5	11.4	667.1	10.4	817.3	18.4	623.5	11.4	76
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	63	KZ1.5-76	102	64113	1.3	17.1070	5.0	0.6654	5.2	0.0826	1.3	0.25	511.4	6.4	517.9	21.1	546.9	110.0	511.4	6.4	94
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	64	KZ1.5-77	249	269481	0.8	13.6696	0.3	1.6904	2.7	0.1676	2.7	0.99	998.8	25.0	1004.9	17.4	1018.2	7.0	1018.2	7.0	98
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	65	KZ1.5-78	812	24277	25.4	20.9181	2.6	0.0569	3.8	0.0086	2.7	0.72	55.4	1.5	56.2	2.1	89.7	62.0	55.4	1.5	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	66	KZ1.5-79	48	55838	0.7	10.1689	1.2	3.7849	3.5	0.2791	3.2	0.93	1587.0	45.3	1589.5	27.7	1592.8	23.2	1592.8	23.2	100
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	67	KZ1.5-80	80	64560	0.5	12.6654	1.5	2.0198	8.3	0.1855	8.2	0.98	1097.1	82.5	1122.2	56.6	1171.0	30.1	1171.0	30.1	94
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	68	KZ1.5-82	2872	197307	7.3	17.4603	0.2	0.6618	7.2	0.0838	7.2	1.00	518.8	35.7	515.7	29.0	502.0	4.7	518.8	35.7	103
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	69	KZ1.5-83	953	104706	306.1	15.0921	4.0	0.7062	5.4	0.0773	3.6	0.67	480.0	16.8	542.5	22.9	814.6	84.6	480.0	16.8	59
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	70	KZ1.5-84	140	217529	1.2	7.9926	0.2	6.1188	2.1	0.3547	2.1	0.99	1957.0	35.6	1992.9	18.5	2030.4	4.0	2030.4	4.0	96
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	71	KZ1.5-85	2271	48023	41.5	21.5900	2.4	0.0266	2.7	0.0042	1.2	0.46	26.8	0.3	26.7	0.7	14.2	56.7	26.8	0.3	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	72	KZ1.5-87	538	378554	2.0	14.9791	0.2	1.2451	1.3	0.1353	1.3	0.98	817.9	10.0	821.2	7.4	830.3	4.9	817.9	10.0	99
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	73	KZ1.5-88	850	95652	1.1	20.6384	2.5	0.1218	2.8	0.0182	1.3	0.47	116.4	1.5	116.7	3.1	121.5	59.0	116.4	1.5	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	74	KZ1.5-89	758	142664	3.0	13.7657	0.9	1.2596	4.1	0.1258	4.0	0.97	763.6	28.6	827.7	23.2	1004.0	19.3	763.6	28.6	76
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	75	KZ1.5-91	122	13794	0.9	26.6391	26.9	0.0724	27.1	0.0140	3.9	0.14	89.6	3.5	71.0	18.6	-517.7	728.3	89.6	3.5	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	76	KZ1.5-92	221	27748	1.0	17.0095	2.5	0.6671	2.9	0.0823	1.5	0.50	509.8	7.1	518.9	11.9	559.3	55.1	509.8	7.1	91
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	77	KZ1.5-93	150	234988	2.4	9.2632	0.3	4.7724	1.6	0.3206	1.6	0.98	1792.8	24.9	1780.0	13.6	1765.2	6.2	1765.2	6.2	102
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	78	KZ1.5-94	412	313916	1.5	17.4234	1.4	0.6395	4.4	0.0808	4.1	0.94	500.9	19.9	502.0	17.4	506.7	31.9	500.9	19.9	99
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	79	KZ1.5-95	169	260682	5.4	9.2765	0.3	4.6013	1.9	0.3096	1.8	0.99	1738.6	28.0	1749.5	15.5	1762.5	5.5	1762.5	5.5	99
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	80	KZ1.5-96	123	127659	0.8	12.6105	0.9	2.1530	2.8	0.1969	2.7	0.95	1158.7	28.4	1166.0	19.5	1179.6	17.2	1179.6	17.2	98
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	81	KZ1.5-97	893	732583	3.0	17.3546	0.4	0.6549	1.9	0.0824	1.9	0.98	510.6	9.2	511.5	7.7	515.4	8.0	510.6	9.2	99
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	82	KZ1.5-98	363	36744	0.6	20.2220	2.8	0.1453	3.7	0.0213	2.4	0.65	136.0	3.2	137.8	4.7	169.3	65.5	136.0	3.2	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	83	KZ1.5-99	186	174605	0.7	12.7531	0.8	2.0965	1.4	0.1939	1.1	0.81	1142.5	11.8	1147.6	9.6	1157.3	16.3	1157.3	16.3	99
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	84	KZ1.5-100	315	117131	1.0	11.8297	0.3	2.6342	1.7	0.2260	1.7	0.98	1313.5	19.8	1310.2	12.5	1304.8	6.3	1304.8	6.3	101
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	85	KZ1.5-101	856	152704	2.2	17.2981	0.8	0.6348	3.0	0.0796	2.9	0.97	494.0	13.9	499.1	11.9	522.5	17.0	494.0	13.9	95
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	86	KZ1.5-102	75	5474	1.4	24.5473	25.2	0.0793	26.0	0.0141	6.5	0.25	90.4	5.8	77.5	19.4	-304.0	653.9	90.4	5.8	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	87	KZ1.5-103	397	71266	3.3	20.9948	4.9	0.1336	5.3	0.0203	1.9	0.36	129.8	2.4	127.3	6.3	80.9	117.5	129.8	2.4	NA
27.316217	93.966067	KIMIN	MIDDLE SIWALIK	KZ1.5	88	KZ1.5-104	226	134873	3.5	17.5406	1.7	0.6359	3.0	0.0809	2.4	0.82	501.5	11.7	499.7	11.7	492.0	37.5	501.5	11.7	102

TABLE A2. Details of detrital zircon (U-Th)/Pb analyses (1 sigma uncertainties reported). Analyses conducted by Apatite to Zircon, Inc.

										Isotope ratios							Ages from concordant scans (Ma)								
NORTHING	EASTING	LOCATION	UNIT	SAMPLE ID	GRAIN	GRAIN ID	U (ppm)	Th (ppm)	U/Th	206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Preferred age (Ma)	± (Ma)	Conc. scans (%)
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	1	P1408_007_Zrn_A_1_RAD_0	466	30	15.29	19.0223	4.7	0.1298	4.3	0.0179	1.8	0.05	114.4	2.6	123.9	5.1	310.4	107.2	114.4	2.6	97
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	2	P1408_007_Zrn_A_1_RAD_1	156	125	1.25	17.5562	4.7	0.6515	4.8	0.0830	8.3	0.25	513.8	10.8	509.4	19.4	490.0	104.6	513.8	10.8	84
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	3	P1408_007_Zrn_A_1_RAD_2	2916	318	9.16	17.2951	8.5	0.3466	21.8	0.0435	4.4	0.92	274.3	55.6	302.1	57.1	523.0	188.0	302.1	57.1	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	4	P1408_007_Zrn_A_1_RAD_3	68	59	1.15	20.9952	21.8	0.0720	21.4	0.0110	1.1	0.05	70.3	3.7	70.6	14.6	81.1	265.0	70.3	3.7	61
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	5	P1408_007_Zrn_A_1_RAD_4	178	54	3.28	10.3778	2.7	3.5865	2.7	0.2700	27.0	0.38	1540.6	30.0	1546.6	21.7	1554.8	50.0	1546.6	21.7	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	6	P1408_007_Zrn_A_1_RAD_5	995	142	7.02	17.7494	2.8	0.5599	3.0	0.0721	7.2	0.51	448.7	12.2	451.5	11.1	465.7	62.5	451.5	11.1	90
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	7	P1408_007_Zrn_A_1_RAD_6	21	8	2.82	15.9923	11.2	0.7012	11.6	0.0813	8.1	0.30	504.1	27.5	539.5	48.4	692.3	240.7	504.1	27.5	68
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	8	P1408_007_Zrn_A_1_RAD_7	329	201	1.64	9.6209	3.0	3.9786	3.6	0.2776	27.8	0.55	1579.4	40.2	1629.9	28.9	1695.6	56.0	1629.9	28.9	87
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	9	P1408_007_Zrn_A_1_RAD_8	83	27	3.05	10.0969	3.0	3.8369	3.6	0.2810	28.1	0.57	1596.3	42.4	1600.5	28.7	1606.1	56.6	1600.5	28.7	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	10	P1408_007_Zrn_A_1_RAD_9	168	36	4.73	17.1733	4.2	0.4923	4.4	0.0613	6.1	0.38	383.6	11.6	406.5	14.7	538.6	92.7	383.6	11.6	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	11	P1408_007_Zrn_A_1_RAD_10	922	54	17.07	17.6929	2.4	0.5377	2.7	0.0690	6.9	0.46	430.2	9.1	436.9	9.4	472.7	54.0	430.2	9.1	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	12	P1408_007_Zrn_A_1_RAD_11	117	35	3.31	10.2585	2.6	3.4856	3.4	0.2593	25.9	0.67	1486.4	40.2	1524.0	27.2	1576.6	48.9	1524.0	27.2	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	13	P1408_007_Zrn_A_1_RAD_12	2220	467	4.76	17.1880	2.2	0.6043	2.4	0.0753	7.5	0.50	468.3	9.7	480.0	9.1	536.4	47.3	480.0	9.1	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	14	P1408_007_Zrn_A_1_RAD_13	249	83	2.99	9.7163	2.7	3.8346	3.4	0.2702	27.0	0.63	1541.9	39.3	1600.0	27.0	1677.4	49.1	1600.0	27.0	77
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	15	P1408_007_Zrn_A_1_RAD_14	371	138	2.68	18.5014	3.4	0.5405	3.5	0.0725	7.3	0.35	451.4	10.8	438.8	12.5	373.1	77.5	451.4	10.8	90
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	16	P1408_007_Zrn_A_1_RAD_15	166	57	2.94	16.9147	3.8	0.6331	3.6	0.0777	7.8	0.18	482.2	10.0	498.0	14.3	571.6	82.1	482.2	10.0	87
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	17	P1408_007_Zrn_A_1_RAD_16	360	138	2.61	13.1079	3.0	1.8856	3.0	0.1793	17.9	0.39	1062.9	25.8	1076.0	19.8	1102.7	60.3	1076.0	19.8	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	18	P1408_007_Zrn_A_1_RAD_17	328	81	4.03	17.5131	3.2	0.6398	3.2	0.0813	8.1	0.20	503.7	8.7	502.2	12.7	495.4	71.3	503.7	8.7	90
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	19	P1408_007_Zrn_A_1_RAD_18	502	72	7.00	9.2945	2.1	4.3011	2.4	0.2899	29.0	0.51	1641.2	29.2	1693.6	20.0	1759.0	39.0	1693.6	20.0	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	20	P1408_007_Zrn_A_1_RAD_19	1174	61	19.20	17.3762	3.1	0.6181	3.4	0.0779	7.8	0.52	483.6	14.1	488.7	13.0	512.5	67.2	488.7	13.0	97
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	21	P1408_007_Zrn_A_1_RAD_20	411	113	3.64	9.9552	2.5	3.9464	2.9	0.2850	28.5	0.53	1616.2	33.1	1623.2	23.2	1632.4	46.0	1623.2	23.2	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	22	P1408_007_Zrn_A_1_RAD_21	824	329	2.51	10.6508	3.1	3.1448	2.7	0.2429	24.3	0.27	1401.9	34.0	1443.7	20.6	1505.8	58.2	1443.7	20.6	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	23	P1408_007_Zrn_A_1_RAD_22	208	38	5.49	9.4886	3.3	4.1046	4.2	0.2825	28.3	0.67	1603.7	57.1	1655.2	34.5	1721.2	60.7	1655.2	34.5	90
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	24	P1408_007_Zrn_A_1_RAD_23	243	64	3.77	9.7599	3.3	3.7286	3.5	0.2639	26.4	0.47	1509.9	42.2	1577.5	28.0	1669.2	61.9	1577.5	28.0	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	25	P1408_007_Zrn_A_1_RAD_24	1882	1733	1.09	10.2807	2.5	3.1503	3.4	0.2349	23.5	0.67	1360.1	36.6	1445.1	25.9	1572.4	47.6	1445.1	25.9	48
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	26	P1408_007_Zrn_A_1_RAD_25	790	65	12.18	17.6367	2.8	0.4666	2.7	0.0597	6.0	0.25	373.7	6.9	388.8	8.8	480.0	61.7	373.7	6.9	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	27	P1408_007_Zrn_A_1_RAD_26	615	87	7.09	10.4712	2.7	2.4929	3.3	0.1893	18.9	0.64	1117.7	31.5	1270.0	24.2	1538.0	50.3	1270.0	24.2	61
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	28	P1408_007_Zrn_A_1_RAD_27	55	28	1.96	19.1644	26.0	0.0843	25.5	0.0117	1.2	0.03	75.1	4.6	82.2	20.1	293.5	399.4	75.1	4.6	77
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	29	P1408_007_Zrn_A_1_RAD_28	1488	396	3.76	17.6367	2.3	0.6032	2.5	0.0772	7.7	0.38	479.2	8.4	479.3	9.4	479.7	51.8	479.2	8.4	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	30	P1408_007_Zrn_A_1_RAD_29	435	110	3.97	17.4064	2.3	0.6569	2.6	0.0829	8.3	0.50	513.5	9.8	512.7	10.5	509.0	50.2	513.5	9.8	97
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	31	P1408_007_Zrn_A_1_RAD_30	907	699	1.30	20.8594	7.7	0.0414	7.8	0.0063	0.6	0.18	40.2	1.1	41.2	3.1	96.1	134.9	40.2	1.1	90
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	32	P1408_007_Zrn_A_1_RAD_31	798	387	2.06	20.3211	4.3	0.0921	4.3	0.0136	1.4	0.21	87.0	1.8	89.5	3.7	157.7	101.7	87.0	1.8	90
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	33	P1408_007_Zrn_A_1_RAD_32	185	88	2.10	17.3913	4.2	0.6214	4.0	0.0784	7.8	0.14	486.5	10.0	490.7	15.6	510.7	92.3	486.5	10.0	90
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	34	P1408_007_Zrn_A_1_RAD_33	841	9	97.52	19.0658	12.2	0.0172	12.3	0.0024	0.2	0.10	15.3	0.4	17.3	2.1	304.9	281.1	15.3	0.4	58
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	35	P1408_007_Zrn_A_1_RAD_34	49	147	0.34	12.0904	3.5	2.4627	3.5	0.2160	21.6	0.33	1260.5	30.0	1261.2	25.0	1262.4	68.3	1261.2	25.0	87
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	36	P1408_007_Zrn_A_1_RAD_35	121	41	2.92	9.8902	2.7	3.7802	2.7	0.2712	27.1	0.36	1546.7	29.3	1588.6	21.6	1644.6	49.5	1588.6	21.6	97
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	37	P1408_007_Zrn_A_1_RAD_36	416	127	3.27	17.5932	3.1	0.6074	3.5	0.0775	7.8	0.44	481.2	10.7	481.9	13.3	485.4	69.6	481.2	10.7	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	38	P1408_007_Zrn_A_1_RAD_37	1747	963	1.81	11.9603	3.9	2.0816	4.1	0.1806	18.1	0.44	1070.1	33.0	1142.8	27.9	1283.5	76.3	1142.8	27.9	58
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	39	P1408_007_Zrn_A_1_RAD_38	886	203	4.35	17.9727	2.5	0.6029	2.8	0.0786	7.9	0.46	487.7	10.2	479.1	10.6	438.1	56.4	487.7	10.2	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	40	P1408_007_Zrn_A_1_RAD_39	1045	341	3.07	17.6491	3.1	0.5983	3.1	0.0766	7.7	0.28	475.7	9.3	476.2	12.0	478.4	69.4	475.7	9.3	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	41	P1408_007_Zrn_A_1_RAD_40	169	48	3.55	23.3754	14.9	0.0581	14.7	0.0099	1.0	0.10	63.2	2.7	57.4	8.2	0.0	77.7	63.2	2.7	65

27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	42	P1408_007_Zrn_A_1_RAD_41	309	135	2.30	14.0410	2.7	1.6736	2.7	0.1704	17.0	0.28	1014.5	16.3	998.6	17.0	963.7	54.2	1014.5	16.3	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	43	P1408_007_Zrn_A_1_RAD_42	165	47	3.54	10.0817	2.3	3.6918	2.6	0.2699	27.0	0.47	1540.5	25.6	1569.6	20.7	1609.0	43.1	1569.6	20.7	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	44	P1408_007_Zrn_A_1_RAD_43	739	331	2.24	17.9308	2.3	0.6103	2.3	0.0794	7.9	0.36	492.4	8.6	483.8	8.9	443.3	50.4	492.4	8.6	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	45	P1408_007_Zrn_A_1_RAD_44	517	23	22.71	20.0602	9.6	0.0565	9.5	0.0082	0.8	0.12	52.8	1.6	55.8	5.2	188.2	198.9	52.8	1.6	61
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	46	P1408_007_Zrn_A_1_RAD_45	85	43	1.99	12.7730	3.9	1.8998	3.8	0.1760	17.6	0.27	1045.1	23.7	1081.0	25.5	1154.3	77.4	1045.1	23.7	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	47	P1408_007_Zrn_A_1_RAD_46	313	89	3.50	15.5207	3.5	1.0978	7.2	0.1236	12.4	0.87	751.1	49.7	752.3	38.3	755.7	74.8	752.3	38.3	74
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	48	P1408_007_Zrn_A_1_RAD_47	276	11	25.15	5.4327	4.5	3.3101	4.5	0.1304	13.0	0.29	790.3	21.1	1483.4	34.7	2689.9	74.1	1483.4	34.7	77
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	49	P1408_007_Zrn_A_1_RAD_48	199	83	2.42	13.5740	2.7	1.7644	2.8	0.1737	17.4	0.35	1032.4	18.7	1032.5	18.1	1032.6	54.9	1032.5	18.1	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	50	P1408_007_Zrn_A_1_RAD_49	85	38	2.23	10.1031	2.6	3.8431	2.6	0.2816	28.2	0.42	1599.4	32.2	1601.8	21.0	1605.1	47.7	1601.8	21.0	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	51	P1408_007_Zrn_A_1_RAD_50	185	55	3.38	14.1123	3.4	1.4787	3.5	0.1514	15.1	0.32	908.5	16.3	921.7	21.2	953.4	68.7	908.5	16.3	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	52	P1408_007_Zrn_A_1_RAD_51	745	56	13.35	18.0440	2.5	0.5365	2.6	0.0702	7.0	0.32	437.4	6.7	436.1	9.2	429.1	55.6	437.4	6.7	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	53	P1408_007_Zrn_A_1_RAD_52	163	11	14.65	18.9717	23.0	0.0352	22.9	0.0048	0.5	0.06	31.1	1.4	35.1	7.9	316.5	384.9	31.1	1.4	61
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	54	P1408_007_Zrn_A_1_RAD_53	454	221	2.05	19.0295	7.5	0.0551	7.4	0.0076	0.8	0.11	48.8	1.2	54.4	3.9	309.6	170.9	48.8	1.2	65
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	55	P1408_007_Zrn_A_1_RAD_54	85	48	1.77	13.3032	2.9	2.0772	3.0	0.2004	20.0	0.29	1177.6	17.8	1141.3	20.9	1073.0	59.2	1177.6	17.8	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	56	P1408_007_Zrn_A_1_RAD_55	452	94	4.80	17.8476	2.6	0.6013	2.6	0.0778	7.8	0.29	483.2	7.4	478.0	10.0	453.5	57.1	483.2	7.4	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	57	P1408_007_Zrn_A_1_RAD_56	367	114	3.21	18.3824	3.3	0.6130	3.2	0.0817	8.2	0.17	506.4	8.8	485.4	12.4	387.6	74.6	506.4	8.8	90
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	58	P1408_007_Zrn_A_1_RAD_57	142	32	4.46	17.4246	9.8	0.0702	9.5	0.0089	0.9	0.06	56.9	1.8	68.9	6.3	506.7	216.3	56.9	1.8	87
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	59	P1408_007_Zrn_A_1_RAD_58	514	131	3.93	10.4570	2.2	3.2364	2.8	0.2455	24.6	0.65	1415.0	31.7	1465.9	22.1	1540.6	41.4	1465.9	22.1	55
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	60	P1408_007_Zrn_A_1_RAD_59	339	121	2.80	17.8667	2.4	0.6427	2.6	0.0833	8.3	0.42	515.7	8.9	504.0	10.4	451.0	53.5	515.7	8.9	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	61	P1408_007_Zrn_A_1_RAD_60	719	318	2.26	17.6678	2.5	0.6121	2.7	0.0784	7.8	0.48	486.8	10.7	484.9	10.3	476.1	54.9	484.9	10.3	100
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	62	P1408_007_Zrn_A_1_RAD_62	233	79	2.96	17.3100	3.6	0.6467	3.8	0.0812	8.1	0.38	503.2	12.7	506.4	15.0	521.1	79.8	503.2	12.7	97
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	63	P1408_007_Zrn_A_1_RAD_63	859	160	5.37	17.9598	2.4	0.6101	2.6	0.0795	7.9	0.45	493.0	8.6	483.6	10.0	439.7	52.5	493.0	8.6	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	64	P1408_007_Zrn_A_1_RAD_64	100	47	2.12	13.3120	2.7	1.7180	2.7	0.1659	16.6	0.36	989.3	19.2	1015.3	17.6	1071.8	54.4	1015.3	17.6	94
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	65	P1408_007_Zrn_A_1_RAD_65	67	25	2.71	19.8649	13.3	0.1955	13.3	0.0282	2.8	0.11	179.1	5.5	181.3	22.1	210.6	246.7	179.1	5.5	90
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	66	P1408_007_Zrn_A_1_RAD_66	678	31	22.17	20.8855	6.8	0.0579	6.4	0.0088	0.9	0.11	56.3	1.8	57.2	3.6	93.4	123.2	56.3	1.8	74
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	67	P1408_007_Zrn_A_1_RAD_67	470	65	7.27	17.8253	3.3	0.5793	3.3	0.0749	7.5	0.23	465.6	8.4	464.0	12.1	456.4	72.9	465.6	8.4	97
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	68	P1408_007_Zrn_A_1_RAD_68	483	24	20.11	17.6991	5.3	0.2095	5.2	0.0269	2.7	0.25	171.1	5.6	193.1	9.1	472.1	118.1	171.1	5.6	23
27.718442	94.668658	LIKABALI	UPPER SIWALIK	DTC3	69	P1408_007_Zrn_A_1_RAD_69	265	16	17.07	10.8050	2.7	2.7433	3.1	0.2150	21.5	0.56	1255.2	30.4	1340.3	22.9	1478.8	50.3	1340.3	22.9	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	1	P1408_001_Zrn_A_1_RAD_0	650	470	1.38	15.1452	2.2	1.2011	2.7	0.1319	13.2	0.59	798.9	15.3	801.1	14.9	807.2	46.1	801.1	14.9	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	1a	P1408_001_Zrn_A_1a_RAD_0	604	438	1.38	15.3368	2.5	1.1692	3.0	0.1301	13.0	0.59	788.2	19.5	786.3	16.3	780.9	52.8	786.3	16.3	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	15.2286	1.7	1.1867	2.0	0.1310	9.3	-	794.8	12.0	794.3	11.0	795.8	34.7	794.3	11.0	97
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	2	P1408_001_Zrn_A_1_RAD_1	93	93	1.01	16.3280	15.6	0.6889	15.7	0.0816	8.2	0.17	505.5	20.4	532.1	65.3	647.8	339.6	505.5	20.4	71
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	2b	P1408_001_Zrn_A_1b_RAD_1	79	93	0.85	16.4395	21.6	0.7362	22.0	0.0878	8.8	0.22	542.4	37.4	560.2	95.0	633.2	477.5	542.4	37.4	55
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	16.3662	12.6	0.7049	12.8	0.0844	6.0	-	514.0	17.9	541.1	53.8	642.9	276.8	514.0	17.9	63
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	3	P1408_001_Zrn_A_1_RAD_2	1439	876	1.64	15.4396	2.7	1.1322	3.0	0.1268	12.7	0.47	769.5	16.8	768.8	15.9	766.8	57.3	768.8	15.9	87
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	4	P1408_001_Zrn_A_1_RAD_3	184	185	0.99	19.2616	18.1	0.1036	18.0	0.0145	1.4	0.08	92.6	4.1	100.1	17.1	281.7	325.6	92.6	4.1	77
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	4a	P1408_001_Zrn_A_1a_RAD_3	123	83	1.48	11.4741	49.1	0.1658	48.2	0.0138	1.4	0.02	88.3	9.6	155.7	69.6	1363.9	1048.7	88.3	9.6	52
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	18.3259	17.0	0.1112	16.8	0.0141	1.0	-	92.0	3.8	103.3	16.6	376.9	310.9	92.0	3.8	65
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	5	P1408_001_Zrn_A_1_RAD_4	1307	100	13.07	15.4600	2.3	1.0134	2.8	0.1136	11.4	0.60	693.8	13.3	710.6	14.3	764.0	47.6	693.8	13.3	71
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	6	P1408_001_Zrn_A_1_RAD_5	798	340	2.35	15.1504	2.3	1.2301	2.5	0.1352	13.5	0.46	817.3	13.0	814.4	14.1	806.5	47.4	817.3	13.0	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	6a	P1408_001_Zrn_A_1a_RAD_5	422	152	2.78	14.9596	3.2	1.2626	3.6	0.1370	13.7	0.46	827.6	16.7	829.1	20.2	833.0	66.4	827.6	16.7	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	15.0864	1.8	1.2409	2.1	0.1361	9.6	-	821.1	10.2	819.2	11.6	815.5	38.6	821.1	10.2	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	7	P1408_001_Zrn_A_1_RAD_6	2008	305	6.58	12.8043	1.9	2.0460	2.1	0.1900	19.0	0.53	1121.4	20.0	1131.0	14.0	1149.4	37.1	1131.0	14.0	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	7a	P1408_001_Zrn_A_1a_RAD_6	2097	277	7.56	12.4827	2.4	2.0964	2.9	0.1898	19.0	0.54	1120.3	23.1	1147.6	19.6	1199.7	48.2	1147.6	19.6	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	12.6854	1.5	2.0632	1.7	0.1899	13.4	-	1120.9	15.1	1136.6	11.4	1168.2	29.4	1136.6	11.4	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	8	P1408_001_Zrn_A_1_RAD_7	168	217	0.77	11.3688	3.6	2.5185	3.8	0.2077	20.8	0.49	1216.3	37.5	1277.4	27.4	1381.6	68.9	1277.4	27.4	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	8a	P1408_001_Zrn_A_1a_RAD_7	162	196	0.82	11.6143	4.5	2.4955	5.6	0.2102	21.0	0.59	1229.9	41.5	1270.7	40.6	1340.4	87.3	1270.7	40.6	87
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	8b	P1408_001_Zrn_A_1b_RAD_7	205	226	0.91	11.1631	3.2	2.6983	3.8	0.2185	21.9	0.52	1273.8	31.5	1328.0	27.8	1416.6	62.2	1328.0	27.8	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	11.3353	2.1	2.5879	2.4	0.2119	12.2	-	1244.9	20.8	1296.4	17.6	1387.7	40.8	1296.4	17.6	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	9	P1408_001_Zrn_A_1_RAD_8	525	167	3.15	14.8363	2.8	1.2431	3.3	0.1338	13.4	0.54	809.3	18.1	820.3	18.3	850.2	57.8	809.3	18.1	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	10	P1408_001_Zrn_A_1_RAD_9	882	328	2.69	17.5437	2.4	0.6440	3.3	0.0819	8.2	0.69	507.7	12.6	504.8	13.2	491.6	53.2	507.7	12.6	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	11	P1408_001_Zrn_A_1_RAD_10	942	474	1.98	17.3360	2.2	0.6373	2.9	0.0801	8.0	0.65	496.9	10.2	500.6	11.6	517.8	49.0	496.9	10.2	74
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	11a	P1408_001_Zrn_A_1a_RAD_10	1359	948	1.43	17.8584	2.5	0.6052	3.2	0.0784	7.8	0.65	486.5	12.9	480.5	12.4	452.2	55.6	480.5	12.4	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	17.5674	1.7	0.6228	2.2	0.0792	5.6	-	492.8	8.0	491.2	8.5	489.1	36.7	490.3	7.9	87
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	12	P1408_001_Zrn_A_1_RAD_11	375	320	1.17	15.1168	2.6	1.2150	3.1	0.1332	13.3	0.61	806.2	21.5	807.5	17.3	811.2	54.5	807.5	17.3	87
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	12a	P1408_001_Zrn_A_1a_RAD_11	411	364	1.13	14.4048	4.7	1.2300	5.2	0.1285	12.9	0.51	779.3	29.9	814.3	29.2	911.3	95.9	814.3	29.2	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	12b	P1408_001_Zrn_A_1b_RAD_11	283	231	1.22	15.3298	4.3	1.1776	4.7	0.1309	13.1	0.47	793.2	27.5	790.2	25.8	781.8	91.3	790.2	25.8	97
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	15.0292	2.0	1.2088	2.3	0.1308	7.6	-	795.9	14.7	804.5	12.9	824.2	42.1	804.5	12.9	92
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	13	P1408_001_Zrn_A_1_RAD_12	531	312	1.70	17.8234	19.8	0.0618	19.7	0.0080	0.8	0.09	51.3	2.4	60.9	11.6	456.6	422.1	51.3	2.4	48
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	14	P1408_001_Zrn_A_1_RAD_13	940	1126	0.84	19.7063	8.4	0.0934	8.4	0.0134	1.3	0.15	85.5	2.6	90.7	7.3	229.3	196.0	85.5	2.6	61
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	15	P1408_001_Zrn_A_1_RAD_14	232	187	1.24	19.9793	15.6	0.0926	15.7	0.0134	1.3	0.12	86.0	3.2	90.0	13.5	197.4	262.6	86.0	3.2	52
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	16	P1408_001_Zrn_A_1_RAD_15	860	127	6.78	16.6428	3.7	0.6644	5.2	0.0802	8.0	0.70	497.3	19.2	517.3	20.9	606.7	79.9	497.3	19.2	74
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	16a	P1408_001_Zrn_A_1a_RAD_15	923	101	9.16	17.2990	3.5	0.6337	4.0	0.0795	8.0	0.48	493.2	12.1	498.4	15.7	522.4	77.1	493.2	12.1	87
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	16b	P1408_001_Zrn_A_1b_RAD_15	586	156	3.75	17.3006	11.4	0.6150	11.9	0.0772	7.7	0.30	479.2	21.4	486.7	46.0	522.2	251.7	479.2	21.4	84
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	17.0020	2.5	0.6432	3.0	0.0789	4.6	-	491.6	9.2	503.9	12.1	561.2	54.2	491.6	9.2	82
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	17	P1408_001_Zrn_A_1_RAD_16	341	216	1.58	16.5419	3.8	0.6947	4.0	0.0833	8.3	0.38	516.0	12.0	535.6	16.8	619.8	82.1	516.0	12.0	74
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	17a	P1408_001_Zrn_A_1a_RAD_16	338	235	1.44	18.2070	3.8	0.5973	4.0	0.0789	7.9	0.37	489.4	11.2	475.5	15.1	409.1	84.1	489.4	11.2	65
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	17.3843	2.7	0.6453	2.8	0.0810	5.7	-	501.9	8.2	502.4	11.2	517.0	58.7	501.9	8.2	69
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	18	P1408_001_Zrn_A_1_RAD_17	190	90	2.12	9.0173	2.5	4.7573	3.3	0.3111	31.1	0.64	1746.2	39.2	1777.4	27.3	1814.2	45.6	1777.4	27.3	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	19	P1408_001_Zrn_A_1_RAD_18	3224	986	3.27	17.8483	2.3	0.6379	2.6	0.0826	8.3	0.53	511.5	9.8	501.0	10.3	453.5	50.1	511.5	9.8	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	19a	P1408_001_Zrn_A_1a_RAD_18	2296	73	31.45	18.5162	9.7	0.0579	9.8	0.0078	0.8	0.19	49.9	1.7	57.1	5.5	371.3	220.8	49.9	1.7	58
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	17.8822	2.2	0.5999	2.5	0.0084	0.8	-	62.8	1.6	154.6	4.8	449.4	48.8	62.8	1.6	76
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	20	P1408_001_Zrn_A_1_RAD_19	544	358	1.52	17.2584	3.1	0.5771	3.7	0.0722	7.2	0.53	449.6	10.8	462.6	13.7	527.6	68.9	449.6	10.8	77
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	21	P1408_001_Zrn_A_1_RAD_20	420	189	2.22	14.4737	2.9	1.3299	3.2	0.1396	14.0	0.45	842.4	16.6	858.8	18.5	901.5	59.6	842.4	16.6	81
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	22	P1408_001_Zrn_A_1_RAD_21	111	37	3.03	17.6699	32.7	0.0752	32.3	0.0096	1.0	0.02	61.8	3.6	73.6	22.9	475.7	535.3	61.8	3.6	87
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	23	P1408_001_Zrn_A_1_RAD_22	282	409	0.69	13.2858	3.5	1.9372	3.8	0.1867	18.7	0.46	1103.3	27.0	1094.0	25.5	1075.7	69.6	1094.0	25.5	90
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	23a	P1408_001_Zrn_A_1a_RAD_22	343	548	0.63	12.9280	3.0	1.9285	3.6	0.1808	18.1	0.54	1071.5	23.7	1091.0	23.8	1130.3	60.0	1091.0	23.8	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	13.0818	2.3	1.9325	2.6	0.1836	13.0	-	1085.3	17.8	1092.4	17.4	1107.0	45.4	1092.4	17.4	92
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	24	P1408_001_Zrn_A_1_RAD_23	2936	1912	1.54	17.9019	2.1	0.4576	3.0	0.0594	5.9	0.71	372.0	9.0	382.6	9.6	446.8	46.9	372.0	9.0	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	25	P1408_001_Zrn_A_1_RAD_24	85	55	1.55	12.7815	5.4	2.0151	5.5	0.1868	18.7	0.24	1104.0	26.4	1120.6	37.2	1152.9	107.8	1104.0	26.4	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	26	P1408_001_Zrn_A_1_RAD_25	221	194	1.14	16.6406	16.0	0.1119	15.9	0.0135	1.4	0.15	86.5	5.0	107.7	16.2	607.0	352.4	86.5	5.0	45
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	26a	P1408_001_Zrn_A_1a_RAD_25	150	140	1.07	18.8262	23.5	0.1032	23.5	0.0141	1.4	0.18	90.2	7.6	99.8	22.3	333.8	397.0	90.2	7.6	39
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	26b	P1408_001_Zrn_A_1b_RAD_25	101	56	1.81	20.1748	22.9	0.0975	22.6	0.0143	1.4	0.07	91.3	5.5	94.5	20.4	174.7	318.3	91.3	5.5	55
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	18.0468	11.5	0.1062	11.4	0.0139	0.8	-	89.0	3.3	101.9	11.0	359.7	203.0	89.0	3.3	46
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	27	P1408_001_Zrn_A_1_RAD_26	809	220	3.68	9.0842	2.3	4.6264	3.1	0.3048	30.5	0.68	1715.1	39.2	1754.0	26.1	1800.7	41.9	1754.0	26.1	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	28	P1408_001_Zrn_A_1_RAD_27	1068	659	1.62	17.5409	2.7	0.6338	2.8	0.0806	8.1	0.44	499.9	11.5	498.4	11.1	491.9	59.7	498.4	11.1	87
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	29	P1408_001_Zrn_A_1_RAD_28	2016	527	3.82	16.9599	5.4	0.1984	5.6	0.0244	2.4	0.39	155.4	6.2	183.8	9.4	565.7	118.4	155.4	6.2	84
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	30	P1408_001_Zrn_A_1_RAD_29	526	146	3.59	17.5981	3.4	0.5834	4.5	0.0745	7.4	0.65	463.0	14.2	466.6	17.0	484.7	76.1	463.0	14.2	87
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	31	P1408_001_Zrn_A_1_RAD_30	1702	1067	1.60	17.2167	1.8	0.6269	2.2	0.0783	7.8	0.54	485.8	7.4	494.2	8.5	532.9	40.1	485.8	7.4	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	31a	P1408_001_Zrn_A_1a_RAD_30	1627	546	2.98	17.1198	2.8	0.6144	3.2	0.0763	7.6	0.51	473.9	10.1	486.3	12.4	545.2	60.9	473.9	10.1	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	17.1875	1.5	0.6230	1.8	0.0773	5.5	-	481.7	6.0	491.7	7.0	536.6	33.5	481.7	6.0	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	32	P1408_001_Zrn_A_1_RAD_31	141	36	3.88	8.4235	5.4	5.3129	6.7	0.3246	32.5	0.61	1812.1	84.4	1870.9	57.2	1937.0	96.9	1870.9	57.2	90

27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	32a	P1408_001_Zrn_A_1a_RAD_31	359	24	15.10	8.9920	1.9	4.9417	2.3	0.3223	32.2	0.59	1800.9	28.9	1809.4	19.6	1819.3	34.3	1809.4	19.6	97
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	8.9302	1.8	4.9815	2.2	0.3234	22.9	-	1802.0	27.3	1815.9	18.5	1832.4	32.3	1815.9	18.5	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	33	P1408_001_Zrn_A_1_RAD_32	359	399	0.90	17.6057	18.9	0.0542	18.6	0.0069	0.7	0.03	44.5	1.7	53.6	9.7	483.8	426.3	44.5	1.7	52
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	33a	P1408_001_Zrn_A_1a_RAD_32	317	354	0.90	20.3410	22.4	0.0452	22.0	0.0067	0.7	0.04	42.8	2.2	44.9	9.7	155.5	304.9	42.8	2.2	68
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	18.7422	14.4	0.0504	14.2	0.0068	0.5	-	43.8	1.3	49.2	6.9	266.6	248.0	43.8	1.3	60
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	34	P1408_001_Zrn_A_1_RAD_33	833	561	1.48	21.3150	8.3	0.0603	8.2	0.0093	0.9	0.08	59.8	1.3	59.4	4.7	44.9	116.3	59.8	1.3	71
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	34a	P1408_001_Zrn_A_1a_RAD_33	383	168	2.28	18.9132	17.6	0.0644	17.5	0.0088	0.9	0.10	56.7	2.3	63.4	10.8	323.4	340.1	56.7	2.3	52
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	20.8762	7.5	0.0610	7.4	0.0091	0.6	-	59.0	1.2	60.1	4.3	74.1	110.0	59.0	1.2	61
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	35	P1408_001_Zrn_A_1_RAD_34	398	189	2.11	19.0330	9.0	0.1008	9.1	0.0139	1.4	0.22	89.1	2.8	97.5	8.5	309.0	204.9	89.1	2.8	55
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	35a	P1408_001_Zrn_A_1a_RAD_34	314	174	1.80	19.5205	13.7	0.0950	13.7	0.0135	1.3	0.07	86.2	2.6	92.2	12.0	251.1	269.9	86.2	2.6	84
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	19.1783	7.5	0.0990	7.6	0.0137	1.0	-	87.5	1.9	95.8	6.9	287.8	163.2	87.5	1.9	69
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	36	P1408_001_Zrn_A_1_RAD_35	1059	752	1.41	13.9127	2.0	1.6160	2.5	0.1631	16.3	0.57	973.8	16.5	976.4	15.5	982.5	41.2	976.4	15.5	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	37	P1408_001_Zrn_A_1_RAD_36	365	93	3.93	12.2495	3.6	1.7191	8.0	0.1527	15.3	0.90	916.2	65.2	1015.7	51.6	1236.8	70.2	1015.7	51.6	45
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	38	P1408_001_Zrn_A_1_RAD_37	490	282	1.74	17.9453	3.7	0.5976	4.0	0.0778	7.8	0.41	482.9	11.4	475.7	15.0	441.4	81.8	482.9	11.4	74
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	39	P1408_001_Zrn_A_1_RAD_38	1458	836	1.74	15.1398	4.5	1.1789	5.4	0.1294	13.0	0.65	784.7	39.6	790.8	29.7	808.0	94.0	790.8	29.7	71
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	40	P1408_001_Zrn_A_1_RAD_39	2296	415	5.53	17.4840	2.2	0.6375	2.7	0.0808	8.1	0.61	501.1	11.5	500.8	10.7	499.1	48.9	500.8	10.7	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	41	P1408_001_Zrn_A_1_RAD_40	481	88	5.44	13.7957	2.5	1.5606	2.7	0.1561	15.6	0.47	935.3	19.1	954.7	16.7	999.6	50.6	954.7	16.7	90
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	42	P1408_001_Zrn_A_1_RAD_41	2654	1426	1.86	10.2263	2.1	3.3683	2.2	0.2498	25.0	0.39	1437.6	20.7	1497.1	17.5	1582.3	39.1	1497.1	17.5	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	42a	P1408_001_Zrn_A_1a_RAD_41	2592	1307	1.98	10.3981	2.2	3.3612	2.6	0.2535	25.4	0.54	1456.4	25.1	1495.4	20.3	1551.1	41.0	1495.4	20.3	74
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	10.3084	1.5	3.3653	1.7	0.2516	17.8	-	1445.2	16.0	1496.4	13.3	1567.5	28.3	1496.4	13.3	87
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	43	P1408_001_Zrn_A_1_RAD_42	749	244	3.07	9.6173	2.2	4.1292	2.6	0.2880	28.8	0.55	1631.6	28.3	1660.1	21.2	1696.3	40.2	1660.1	21.2	97
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	44	P1408_001_Zrn_A_1_RAD_43	350	588	0.59	12.4919	2.3	2.1081	3.0	0.1910	19.1	0.65	1126.7	26.7	1151.5	20.5	1198.3	45.8	1151.5	20.5	84
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	44a	P1408_001_Zrn_A_1a_RAD_43	304	184	1.66	12.2639	3.1	2.1691	3.4	0.1929	19.3	0.45	1137.2	22.6	1171.2	24.0	1234.5	60.6	1137.2	22.6	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	12.4096	1.9	2.1342	2.3	0.1920	13.6	-	1132.9	17.2	1159.8	15.6	1211.4	36.5	1145.0	15.2	89
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	45	P1408_001_Zrn_A_1_RAD_44	174	64	2.72	16.6582	5.5	0.5926	5.7	0.0716	7.2	0.37	445.8	16.5	472.5	21.7	604.7	120.2	445.8	16.5	68
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	45a	P1408_001_Zrn_A_1a_RAD_44	760	35	21.59	18.4229	9.0	0.1204	9.2	0.0161	1.6	0.22	102.9	3.1	115.4	10.1	382.7	203.8	102.9	3.1	68
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	17.1420	4.7	0.4610	4.9	0.0188	1.6	-	114.6	3.0	178.8	9.1	547.4	103.5	114.6	3.0	68
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	46	P1408_001_Zrn_A_1_RAD_45	720	588	1.23	20.4596	16.1	0.0498	15.9	0.0074	0.7	0.06	47.5	2.0	49.3	7.7	141.9	241.3	47.5	2.0	68
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	46a	P1408_001_Zrn_A_1a_RAD_45	632	485	1.30	19.1442	24.3	0.0525	24.1	0.0073	0.7	0.07	46.8	2.4	52.0	12.2	295.7	386.2	46.8	2.4	68
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	20.0572	13.5	0.0506	13.3	0.0073	0.5	-	47.2	1.5	50.1	6.5	185.1	204.6	47.2	1.5	68
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	47	P1408_001_Zrn_A_1_RAD_46	1069	501	2.14	20.4087	14.5	0.0268	14.3	0.0040	0.4	0.06	25.5	0.8	26.8	3.8	147.8	228.0	25.5	0.8	77
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	47a	P1408_001_Zrn_A_1a_RAD_46	169	83	2.04	12.6461	8.6	1.1005	11.1	0.1009	10.1	0.63	619.9	46.1	753.6	59.0	1174.0	170.9	619.9	46.1	58
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	14.6720	7.4	0.6991	8.8	0.0041	0.4	-	25.7	0.8	29.8	3.8	804.8	136.8	25.7	0.8	68
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	48	P1408_001_Zrn_A_1_RAD_47	1244	539	2.31	15.0458	2.4	1.1451	2.4	0.1250	12.5	0.37	759.0	14.8	774.9	13.2	821.0	50.8	774.9	13.2	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	48a	P1408_001_Zrn_A_1a_RAD_47	1392	624	2.23	15.1418	2.4	1.1547	2.6	0.1268	12.7	0.43	769.6	13.4	779.5	14.1	807.7	49.8	769.6	13.4	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	48b	P1408_001_Zrn_A_1b_RAD_47	1204	563	2.14	14.8701	3.1	1.1649	3.2	0.1256	12.6	0.31	762.9	14.6	784.3	17.4	845.5	64.4	762.9	14.6	90
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	15.0428	1.5	1.1532	1.6	0.1258	7.3	-	764.2	8.2	778.7	8.4	821.5	31.1	769.5	7.9	95
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	49	P1408_001_Zrn_A_1_RAD_48	459	87	5.29	16.8218	3.9	0.6866	4.0	0.0838	8.4	0.28	518.6	10.3	530.8	16.5	583.5	84.5	518.6	10.3	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	50	P1408_001_Zrn_A_1_RAD_49	1153	493	2.34	19.7311	10.8	0.0277	10.6	0.0040	0.4	0.11	25.5	0.9	27.7	2.9	226.4	229.4	25.5	0.9	87
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	51	P1408_001_Zrn_A_1_RAD_50	1196	189	6.32	17.2446	2.8	0.5930	3.2	0.0742	7.4	0.50	461.2	9.5	472.8	12.1	529.4	61.1	461.2	9.5	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	51a	P1408_001_Zrn_A_1a_RAD_50	577	237	2.44	16.8389	3.8	0.6261	4.2	0.0765	7.6	0.42	475.0	11.6	493.7	16.2	581.3	82.9	475.0	11.6	87
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	51b	P1408_001_Zrn_A_1b_RAD_50	950	301	3.16	18.2017	3.0	0.5712	3.3	0.0754	7.5	0.41	468.6	10.2	458.8	12.1	409.8	68.1	468.6	10.2	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	17.4917	1.8	0.5926	2.0	0.0753	4.4	-	468.0	5.9	471.8	7.6	500.4	39.9	467.4	5.9	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	52	P1408_001_Zrn_A_1_RAD_51	265	38	7.03	6.1807	4.7	8.9994	6.7	0.4034	40.4	0.72	2184.8	111.5	2337.9	61.3	2474.5	79.7	2337.9	61.3	10
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	53	P1408_001_Zrn_A_2_RAD_0	829	103	8.08	15.6681	8.8	0.2217	8.9	0.0252	2.5	0.19	160.4	4.7	203.4	16.4	735.8	187.8	160.4	4.7	55
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	54	P1408_001_Zrn_A_2_RAD_1	767	442	1.74	19.5242	6.0	0.2115	6.3	0.0300	3.0	0.29	190.2	4.6	194.8	11.2	250.7	139.5	190.2	4.6	81
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	54a	P1408_001_Zrn_A_2a_RAD_1	1969	1143	1.72	18.1255	4.9	0.2265	5.2	0.0298	3.0	0.38	189.2	5.1	207.3	9.8	419.2	108.6	189.2	5.1	58
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	18.6738	3.8	0.2204	4.0	0.0299	2.1	-	189.8	3.4	201.9	7.4	355.6	85.7	189.8	3.4	69
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	55	P1408_001_Zrn_A_2_RAD_2	374	193	1.94	12.5337	2.5	2.0370	2.9	0.1852	18.5	0.50	1095.2	19.9	1128.0	19.8	1191.7	50.2	1128.0	19.8	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	55a	P1408_001_Zrn_A_2a_RAD_2	402	225	1.79	12.1925	3.1	2.0435	3.5	0.1807	18.1	0.48	1070.8	24.1	1130.1	24.2	1245.9	61.7	1130.1	24.2	77
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	12.3991	2.0	2.0396	2.3	0.1829	12.9	-	1085.3	15.4	1128.8	15.3	1213.3	38.9	1128.8	15.3	85
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	56	P1408_001_Zrn_A_2_RAD_3	379	141	2.68	20.4570	23.9	0.0632	23.6	0.0094	0.9	0.04	60.1	2.8	62.2	14.3	142.2	311.7	60.1	2.8	68
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	57	P1408_001_Zrn_A_2_RAD_4	705	199	3.55	16.9631	3.2	0.6175	3.6	0.0760	7.6	0.48	472.0	11.1	488.3	13.8	565.3	68.7	472.0	11.1	84
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	58	P1408_001_Zrn_A_2_RAD_5	2143	1244	1.72	15.0914	2.0	1.2188	2.1	0.1334	13.3	0.38	807.2	9.8	809.2	12.0	814.7	41.6	807.2	9.8	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	59	P1408_001_Zrn_A_2_RAD_6	701	327	2.15	17.4814	5.4	0.6294	5.6	0.0798	8.0	0.34	494.9	15.5	495.7	22.0	499.4	119.5	494.9	15.5	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	59a	P1408_001_Zrn_A_2a_RAD_6	1118	574	1.95	17.3567	2.9	0.5961	3.2	0.0750	7.5	0.40	466.4	8.9	474.8	12.0	515.1	63.9	466.4	8.9	97
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	17.3846	2.6	0.6041	2.8	0.0773	5.5	-	473.5	7.7	479.5	10.5	511.6	56.4	473.5	7.7	98
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	60	P1408_001_Zrn_A_2_RAD_7	462	51	9.03	10.4499	2.1	3.3036	2.7	0.2504	25.0	0.67	1440.4	30.5	1481.9	21.3	1541.8	38.7	1481.9	21.3	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	61	P1408_001_Zrn_A_2_RAD_8	151	108	1.40	18.4129	33.1	0.0557	32.5	0.0074	0.7	0.02	47.8	3.3	55.0	17.4	383.9	496.8	47.8	3.3	77
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	62	P1408_001_Zrn_A_2_RAD_9	706	438	1.61	16.8732	3.6	0.6029	3.9	0.0738	7.4	0.43	458.9	9.3	479.0	15.1	576.9	77.6	458.9	9.3	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	63	P1408_001_Zrn_A_2_RAD_10	440	439	1.00	16.7431	20.4	0.0585	20.2	0.0071	0.7	0.05	45.6	1.9	57.7	11.3	593.7	454.2	45.6	1.9	71
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	64	P1408_001_Zrn_A_2_RAD_11	876	506	1.73	15.2760	2.5	1.1555	2.9	0.1280	12.8	0.53	776.6	14.4	779.8	15.7	789.2	51.6	776.6	14.4	100
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	64a	P1408_001_Zrn_A_2a_RAD_11	805	173	4.66	15.2882	2.5	1.1803	2.8	0.1309	13.1	0.45	792.9	13.3	791.5	15.4	787.6	52.8	792.9	13.3	87
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	15.2820	1.8	1.1683	2.0	0.1294	9.2	-	785.3	9.8	785.8	11.0	788.4	36.9	785.3	9.8	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	65	P1408_001_Zrn_A_2_RAD_12	147	110	1.34	16.7294	28.9	0.1071	28.7	0.0130	1.3	0.04	83.2	4.1	103.3	28.2	595.4	561.2	83.2	4.1	84
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	66	P1408_001_Zrn_A_3_RAD_2	43	25	1.75	14.8601	7.4	1.2710	7.7	0.1370	13.7	0.28	827.6	25.3	832.9	43.7	846.9	155.1	827.6	25.3	87
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	67	P1408_001_Zrn_A_3_RAD_3	115	261	0.44	18.2663	6.3	0.5689	6.3	0.0754	7.5	0.17	468.5	11.5	457.3	23.2	401.8	142.0	468.5	11.5	77
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	68	P1408_001_Zrn_A_3_RAD_4	447	160	2.79	20.9211	5.7	0.1774	5.9	0.0269	2.7	0.30	171.2	3.8	165.8	9.1	89.3	109.2	171.2	3.8	61
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	68a	P1408_001_Zrn_A_3a_RAD_4	374	126	2.96	19.6782	6.9	0.1864	7.0	0.0266	2.7	0.20	169.3	4.3	173.6	11.2	232.6	160.4	169.3	4.3	74
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	weighted	-	-	-	-	20.4228	4.4	0.1812	4.5	0.0268	1.9	-	170.4	2.8	168.9	7.0	134.7	90.3	170.4	2.8	68
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	69	P1408_001_Zrn_A_3_RAD_5	922	57	16.14	16.1073	2.9	0.8090	3.3	0.0945	9.5	0.48	582.2	13.0	601.9	14.9	677.0	62.7	582.2	13.0	81
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	70	P1408_001_Zrn_A_3_RAD_6	692	172	4.02	18.1836	29.1	0.0341	28.9	0.0045	0.5	0.01	29.0	1.1	34.1	9.7	412.0	478.4	29.0	1.1	65
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	71	P1408_001_Zrn_A_3_RAD_7	291	184	1.58	16.3306	3.9	0.6302	3.6	0.0746	7.5	0.34	464.1	14.7	496.3	14.0	647.5	83.0	496.3	14.0	74
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	72	P1408_001_Zrn_A_3_RAD_8	297	316	0.94	12.5419	2.6	2.0614	2.7	0.1875	18.8	0.30	1107.9	17.3	1136.1	18.4	1190.4	51.9	1107.9	17.3	94
27.690301	94.673102	LIKABALI	MIDDLE SIWALIK	75b	73	P1408_001_Zrn_A_3_RAD_9	733	444	1.65	17.1844	2.6	0.6310	2.9	0.0786	7.9	0.49	488.0	9.6	496.7	11.6	537.0	56.8	488.0	9.6	90
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	1	P1408_003_Zrn_A_1_RAD_0	42	10	4.43	15.2436	37.7	0.0820	37.4	0.0091	0.9	0.02	58.2	3.3	80.0	28.7	793.7	716.0	58.2	3.3	65
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	2	P1408_003_Zrn_A_1_RAD_1	98	27	3.60	10.9198	2.7	3.1778	2.8	0.2517	25.2	0.33	1447.1	21.4	1451.8	21.9	1458.6	51.7	1447.1	21.4	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	3	P1408_003_Zrn_A_1_RAD_2	162	41	4.00	21.3290	17.8	0.0604	17.5	0.0093	0.9	0.03	60.0	2.5	59.6	10.1	43.3	211.1	60.0	2.5	42
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	4	P1408_003_Zrn_A_1_RAD_3	270	110	2.46	18.0761	16.6	0.0635	16.6	0.0083	0.8	0.04	53.4	1.1	62.5	10.0	425.2	376.9	53.4	1.1	61
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	5	P1408_003_Zrn_A_1_RAD_4	491	175	2.81	12.8023	2.0	2.0851	2.1	0.1936	19.4	0.37	1140.8	16.0	1143.9	14.3	1149.7	39.9	1143.9	14.3	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	6	P1408_003_Zrn_A_1_RAD_5	215	130	1.65	13.6538	2.0	1.5934	2.1	0.1578	15.8	0.28	944.5	11.7	967.6	12.9	1020.6	41.3	944.5	11.7	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	7	P1408_003_Zrn_A_1_RAD_6	437	135	3.23	17.2360	2.3	0.7702	2.5	0.0963	9.6	0.38	592.6	9.0	579.9	10.9	530.5	50.7	592.6	9.0	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	8	P1408_003_Zrn_A_1_RAD_7	2229	403	5.53	18.1142	1.6	0.6194	1.6	0.0814	8.1	0.29	504.4	5.7	489.5	6.3	420.5	35.4	504.4	5.7	90
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	9	P1408_003_Zrn_A_1_RAD_8	723	175	4.13	20.3330	8.9	0.0378	8.7	0.0056	0.6	0.03	35.8	0.8	37.6	3.2	156.5	176.1	35.8	0.8	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	10	P1408_003_Zrn_A_1_RAD_9	18	13	1.36	13.4359	7.2	1.5595	7.4	0.1520	15.2	0.29	912.0	27.6	954.3	46.1	1053.1	145.1	912.0	27.6	97
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	11	P1408_003_Zrn_A_1_RAD_10	85	65	1.31	13.9100	3.1	1.8569	3.2	0.1873	18.7	0.32	1106.9	17.9	1065.9	21.3	982.8	63.3	1106.9	17.9	97
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	12	P1408_003_Zrn_A_1_RAD_11	101	44	2.31	20.3727	16.0	0.1023	15.7	0.0151	1.5	0.03	96.7	3.5	98.9	14.8	151.9	244.3	96.7	3.5	68
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	13	P1408_003_Zrn_A_1_RAD_12	19	22	0.88	11.8826	6.5	2.3550	6.5	0.2030	20.3	0.22	1191.2	31.7	1229.1	46.4	1296.2	126.7	1191.2	31.7	94
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	14	P1408_003_Zrn_A_1_RAD_13	432	50	8.63	14.9927	2.1	1.2298	2.3	0.1337	13.4	0.49	809.1	13.7	814.2	12.8	828.4	42.9	814.2	12.8	94
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	15	P1408_003_Zrn_A_1_RAD_14	226	110	2.06	11.9997	2.7	2.2584	2.7	0.1965	19.7	0.29	1156.8	17.9	1199.4	19.2	1277.1	52.7	1156.8	17.9	84
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	16	P1408_003_Zrn_A_1_RAD_15	1895	8	245.73	19.5578	5.5	0.0399	5.4	0.0057	0.6	0.08	36.4	0.5	39.8	2.1	246.7	126.7	36.4	0.5	97
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	17	P1408_003_Zrn_A_1_RAD_16	644	71	9.08	12.4293	1.7	2.4497	1.7	0.2208	22.1	0.38	1286.3	18.1	1257.3	12.5	1208.2	34.4	1257.3	12.5	90

27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	18	P1408_003_Zrn_A_1_RAD_17	662	147	4.50	17.5234	3.0	0.4970	3.0	0.0632	6.3	0.36	394.8	8.8	409.6	10.1	494.1	66.2	394.8	8.8	87
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	19	P1408_003_Zrn_A_1_RAD_18	177	223	0.79	17.3637	4.0	0.6901	4.0	0.0869	8.7	0.20	537.2	8.6	532.8	16.6	514.2	87.5	537.2	8.6	97
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	20	P1408_003_Zrn_A_1_RAD_19	1563	53	29.44	18.1508	2.2	0.4486	2.5	0.0591	5.9	0.51	369.9	7.1	376.3	7.8	416.0	49.4	369.9	7.1	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	21	P1408_003_Zrn_A_1_RAD_20	348	149	2.34	17.6799	14.6	0.0580	14.4	0.0074	0.7	0.01	47.7	1.3	57.2	8.0	474.5	326.5	47.7	1.3	58
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	22	P1408_003_Zrn_A_1_RAD_21	53	32	1.65	15.9354	26.9	0.0773	26.4	0.0089	0.9	0.01	57.4	3.1	75.6	19.2	699.9	594.0	57.4	3.1	61
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	23	P1408_003_Zrn_A_1_RAD_22	87	21	4.11	22.9341	32.3	0.0615	32.2	0.0102	1.0	0.03	65.6	2.4	60.6	18.9	0.0	258.6	65.6	2.4	77
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	24	P1408_003_Zrn_A_1_RAD_23	1019	309	3.30	12.9619	1.7	1.8973	1.7	0.1784	17.8	0.27	1058.0	12.4	1080.1	11.1	1125.1	33.7	1080.1	11.1	90
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	25	P1408_003_Zrn_A_1_RAD_24	115	53	2.18	9.4201	2.0	4.6837	2.1	0.3200	32.0	0.43	1789.7	24.1	1764.3	17.9	1734.4	36.2	1764.3	17.9	87
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	26	P1408_003_Zrn_A_1_RAD_25	495	125	3.95	16.8062	2.9	0.6738	3.0	0.0821	8.2	0.31	508.8	7.7	523.0	12.1	585.5	62.1	508.8	7.7	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	27	P1408_003_Zrn_A_1_RAD_26	361	58	6.18	21.2333	13.3	0.0677	13.3	0.0104	1.0	0.09	66.9	2.0	66.6	8.6	54.1	172.5	66.9	2.0	52
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	28	P1408_003_Zrn_A_1_RAD_27	58	33	1.75	12.9828	4.8	1.7612	4.9	0.1658	16.6	0.22	989.1	17.9	1031.3	31.8	1121.8	96.8	989.1	17.9	81
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	29	P1408_003_Zrn_A_1_RAD_28	1806	199	9.09	17.9058	1.6	0.6314	1.7	0.0820	8.2	0.41	508.0	6.2	497.0	6.7	446.3	34.9	508.0	6.2	94
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	30	P1408_003_Zrn_A_1_RAD_29	67	11	6.11	18.5827	25.2	0.0892	24.9	0.0120	1.2	0.03	77.0	3.2	86.7	20.7	363.3	424.3	77.0	3.2	68
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	31	P1408_003_Zrn_A_1_RAD_30	526	84	6.24	16.7796	2.2	0.7594	2.3	0.0924	9.2	0.31	569.8	7.3	573.7	10.0	588.9	47.9	569.8	7.3	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	32	P1408_003_Zrn_A_1_RAD_31	1102	306	3.60	15.3115	1.6	1.1989	1.6	0.1331	13.3	0.30	805.7	9.6	800.1	8.8	784.4	33.3	800.1	8.8	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	33	P1408_003_Zrn_A_1_RAD_32	384	189	2.03	12.8199	1.6	2.0130	1.7	0.1872	18.7	0.42	1106.0	13.1	1119.9	11.7	1147.0	31.7	1119.9	11.7	71
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	34	P1408_003_Zrn_A_1_RAD_33	19	21	0.94	13.7082	7.5	1.4315	7.7	0.1423	14.2	0.26	857.8	25.4	902.2	46.1	1012.5	152.7	857.8	25.4	77
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	35	P1408_003_Zrn_A_1_RAD_34	478	314	1.52	11.1348	7.3	2.4565	6.6	0.1984	19.8	0.10	1166.6	39.8	1259.3	48.0	1421.5	139.0	1166.6	39.8	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	36	P1408_003_Zrn_A_1_RAD_35	273	94	2.91	12.5667	2.1	2.2741	2.3	0.2073	20.7	0.36	1214.2	15.4	1204.3	15.9	1186.5	42.1	1214.2	15.4	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	37	P1408_003_Zrn_A_1_RAD_36	655	220	2.98	17.4496	2.2	0.6381	2.3	0.0808	8.1	0.35	500.7	8.4	501.2	8.9	503.4	49.5	500.7	8.4	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	38	P1408_003_Zrn_A_1_RAD_37	197	53	3.70	18.9343	15.2	0.0667	15.3	0.0092	0.9	0.12	58.7	1.9	65.5	9.7	320.8	317.3	58.7	1.9	84
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	39	P1408_003_Zrn_A_1_RAD_38	522	26	20.10	11.8382	2.0	2.4201	2.0	0.2078	20.8	0.28	1217.0	14.8	1248.6	14.4	1303.4	38.6	1248.6	14.4	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	40	P1408_003_Zrn_A_1_RAD_39	12	2	5.07	15.2387	14.7	0.8043	14.7	0.0889	8.9	0.12	549.0	20.3	599.3	66.6	794.4	312.8	549.0	20.3	84
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	41	P1408_003_Zrn_A_1_RAD_40	296	57	5.18	19.8435	7.4	0.0972	7.2	0.0140	1.4	0.07	89.6	2.1	94.2	6.5	213.2	171.3	89.6	2.1	77
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	42	P1408_003_Zrn_A_1_RAD_41	622	135	4.60	15.5190	1.6	1.1926	2.5	0.1342	13.4	0.77	812.0	17.1	797.2	14.0	756.0	34.0	797.2	14.0	97
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	43	P1408_003_Zrn_A_1_RAD_42	493	164	3.01	19.2492	10.6	0.0484	10.8	0.0068	0.7	0.20	43.4	1.4	48.0	5.1	283.2	245.3	43.4	1.4	65
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	44	P1408_003_Zrn_A_1_RAD_43	320	79	4.04	10.1915	2.1	3.6412	2.0	0.2691	26.9	0.31	1536.4	23.5	1558.6	16.2	1588.7	39.9	1558.6	16.2	90
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	45	P1408_003_Zrn_A_1_RAD_44	263	70	3.78	18.4248	9.5	0.2125	9.4	0.0284	2.8	0.07	180.5	3.6	195.6	16.8	382.5	214.1	180.5	3.6	35
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	46	P1408_003_Zrn_A_1_RAD_45	740	156	4.76	19.7000	5.0	0.0661	4.9	0.0094	0.9	0.11	60.6	1.1	65.0	3.1	230.0	116.1	60.6	1.1	90
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	47	P1408_003_Zrn_A_1_RAD_46	99	32	3.10	19.4466	21.3	0.0587	21.1	0.0083	0.8	0.03	53.2	2.0	57.9	11.9	259.8	343.6	53.2	2.0	94
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	48	P1408_003_Zrn_A_1_RAD_47	358	87	4.13	17.0960	2.4	0.6166	2.5	0.0764	7.6	0.33	474.9	7.8	487.7	9.6	548.3	53.1	474.9	7.8	90
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	49	P1408_003_Zrn_A_1_RAD_48	2330	1243	1.87	14.8324	1.7	1.2779	1.9	0.1375	13.7	0.52	830.3	11.9	835.9	10.9	850.8	34.5	835.9	10.9	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	50	P1408_003_Zrn_A_1_RAD_49	191	71	2.69	12.5238	2.5	1.8820	2.7	0.1709	17.1	0.41	1017.3	14.4	1074.8	18.2	1193.2	49.6	1017.3	14.4	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	51	P1408_003_Zrn_A_1_RAD_50	674	281	2.40	17.6799	2.4	0.6532	2.3	0.0838	8.4	0.26	518.5	7.7	510.5	9.3	474.5	52.0	518.5	7.7	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	52	P1408_003_Zrn_A_1_RAD_51	172	45	3.81	14.5502	3.5	1.2801	3.4	0.1351	13.5	0.21	816.8	14.3	836.9	19.4	890.6	71.6	816.8	14.3	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	53	P1408_003_Zrn_A_1_RAD_52	320	90	3.54	14.8583	2.8	1.2426	2.7	0.1339	13.4	0.33	810.1	17.8	820.0	15.0	847.1	59.1	820.0	15.0	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	54	P1408_003_Zrn_A_1_RAD_53	970	129	7.51	19.8549	6.5	0.0466	6.3	0.0067	0.7	0.10	43.1	1.1	46.3	2.9	211.9	151.7	43.1	1.1	61
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	55	P1408_003_Zrn_A_1_RAD_54	153	47	3.24	12.5792	3.0	1.9748	3.1	0.1802	18.0	0.38	1067.9	21.5	1107.0	20.7	1184.5	58.8	1107.0	20.7	74
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	56	P1408_003_Zrn_A_1_RAD_55	22	7	3.31	23.6685	34.4	0.0810	33.9	0.0139	1.4	0.02	89.0	5.7	79.1	25.8	0.0	241.8	89.0	5.7	84
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	57	P1408_003_Zrn_A_1_RAD_56	510	129	3.94	14.7139	3.3	1.0712	3.2	0.1143	11.4	0.11	697.8	11.0	739.4	16.8	867.4	69.5	697.8	11.0	55
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	58	P1408_003_Zrn_A_1_RAD_57	59	25	2.39	20.5599	26.2	0.1291	25.9	0.0192	1.9	0.03	122.9	5.7	123.2	30.1	130.4	326.0	122.9	5.7	65
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	59	P1408_003_Zrn_A_1_RAD_58	51	10	4.96	21.1068	25.9	0.1269	25.7	0.0194	1.9	0.03	124.0	4.9	121.3	29.4	68.3	295.2	124.0	4.9	77
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	60	P1408_003_Zrn_A_1_RAD_59	174	22	7.85	20.6019	24.1	0.0349	23.9	0.0052	0.5	0.03	33.5	1.1	34.8	8.2	125.6	305.6	33.5	1.1	77
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	61	P1408_003_Zrn_A_1_RAD_60	1738	774	2.25	19.8780	8.4	0.0364	8.5	0.0053	0.5	0.13	33.8	0.6	36.3	3.0	209.2	195.4	33.8	0.6	61
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	62	P1408_003_Zrn_A_1_RAD_61	467	97	4.84	17.2714	2.7	0.6070	3.5	0.0760	7.6	0.62	472.4	11.1	481.6	13.2	525.9	59.8	472.4	11.1	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	63	P1408_003_Zrn_A_1_RAD_62	98	48	2.04	18.7701	15.2	0.0621	15.2	0.0084	0.8	0.07	54.2	1.1	61.1	9.0	340.6	326.4	54.2	1.1	100
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	64	P1408_003_Zrn_A_1_RAD_64	177	41	4.28	15.3387	2.5	1.2371	2.8	0.1376	13.8	0.42	831.2	13.7	817.6	15.5	780.6	53.5	831.2	13.7	94
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	65	P1408_003_Zrn_A_1_RAD_65	118	37	3.14	14.6779	68.2	0.1528	67.8	0.0163	1.6	0.00	104.0	8.1	144.4	91.5	872.5	936.9	104.0	8.1	35
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	66	P1408_003_Zrn_A_1_RAD_66	375	94	3.99	16.9573	2.8	0.6730	2.9	0.0828	8.3	0.30	512.6	8.8	522.5	11.9	566.1	62.1	512.6	8.8	90
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	67	P1408_003_Zrn_A_1_RAD_67	58	20	2.93	11.3354	2.9	3.1083	3.0	0.2555	25.6	0.29	1467.0	20.8	1434.8	23.1	1387.3	55.8	1467.0	20.8	97
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	68	P1408_003_Zrn_A_1_RAD_68	90	27	3.38	22.0701	20.5	0.0566	20.3	0.0091	0.9	0.04	58.1	2.0	55.9	11.0	0.0	197.7	58.1	2.0	87
27.685349	94.678618	LIKABALI	MIDDLE SIWALIK	50b	69	P1408_003_Zrn_A_1_RAD_69	834	253	3.29	19.7611	8.9	0.0538	8.9	0.0077	0.8	0.10	49.6	1.0	53.2	4.6	222.8	206.3	49.6	1.0	39
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	1	P1408_004_Zrn_A_1_RAD_0	344	101	3.41	17.6208	3.0	0.6383	3.0	0.0816	8.2	0.23	505.5	7.9	501.2	11.8	481.9	66.0	505.5	7.9	90
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	2	P1408_004_Zrn_A_1_RAD_1	268	89	3.01	20.3715	12.7	0.0546	12.6	0.0081	0.8	0.07	51.8	1.6	54.0	6.6	152.0	212.6	51.8	1.6	65
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	3	P1408_004_Zrn_A_1_RAD_2	156	100	1.56	19.7578	14.2	0.0612	14.0	0.0088	0.9	0.04	56.3	1.7	60.3	8.2	223.2	260.7	56.3	1.7	84
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	4	P1408_004_Zrn_A_1_RAD_3	452	116	3.89	14.8837	1.9	1.2716	2.3	0.1373	13.7	0.57	829.2	13.9	833.1	13.3	843.6	40.3	833.1	13.3	94
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	5	P1408_004_Zrn_A_1_RAD_4	230	78	2.96	14.9092	2.8	1.3374	2.8	0.1446	14.5	0.34	870.7	15.1	862.1	16.5	840.0	57.7	870.7	15.1	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	6	P1408_004_Zrn_A_1_RAD_5	222	49	4.50	13.7107	2.0	1.8268	2.0	0.1817	18.2	0.31	1076.0	13.9	1055.1	13.3	1012.2	40.2	1055.1	13.3	97
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	7	P1408_004_Zrn_A_1_RAD_6	135	58	2.34	19.8356	18.6	0.0587	17.9	0.0084	0.8	0.05	54.2	3.3	57.9	10.0	214.1	297.7	54.2	3.3	39
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	8	P1408_004_Zrn_A_1_RAD_7	491	162	3.03	17.6729	2.2	0.6216	2.3	0.0797	8.0	0.32	494.2	6.5	490.8	9.1	475.3	49.4	494.2	6.5	97
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	9	P1408_004_Zrn_A_1_RAD_8	1080	59	18.15	20.3943	7.0	0.0407	6.8	0.0060	0.6	0.10	38.7	1.0	40.5	2.7	149.4	152.7	38.7	1.0	61
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	10	P1408_004_Zrn_A_1_RAD_9	470	100	4.68	16.7909	2.5	0.6629	2.6	0.0807	8.1	0.34	500.5	8.9	516.4	10.5	587.5	55.3	500.5	8.9	84
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	11	P1408_004_Zrn_A_1_RAD_10	260	156	1.67	20.7844	6.8	0.0999	6.6	0.0151	1.5	0.08	96.4	2.1	96.7	6.1	104.8	128.6	96.4	2.1	81
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	12	P1408_004_Zrn_A_1_RAD_11	1303	50	25.85	17.4936	2.1	0.6416	2.3	0.0814	8.1	0.49	504.5	8.8	503.3	9.3	497.9	45.8	504.5	8.8	97
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	13	P1408_004_Zrn_A_1_RAD_12	593	124	4.78	17.4133	2.6	0.6610	2.6	0.0835	8.3	0.46	516.8	12.2	515.2	10.5	508.0	56.4	515.2	10.5	94
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	14	P1408_004_Zrn_A_1_RAD_13	233	63	3.71	18.0490	3.7	0.6413	3.7	0.0840	8.4	0.15	519.7	6.5	503.1	14.6	428.6	81.7	519.7	6.5	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	15	P1408_004_Zrn_A_1_RAD_14	1665	707	2.36	17.3331	2.2	0.6571	2.4	0.0826	8.3	0.44	511.6	9.5	512.8	9.6	518.1	49.0	511.6	9.5	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	16	P1408_004_Zrn_A_1_RAD_15	1613	132	12.22	17.9387	9.7	0.0542	9.8	0.0071	0.7	0.17	45.3	1.5	53.6	5.1	442.2	218.0	45.3	1.5	45
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	17	P1408_004_Zrn_A_1_RAD_16	1429	145	9.82	17.3947	1.9	0.5314	2.0	0.0670	6.7	0.40	418.3	5.5	432.7	7.2	510.3	41.3	418.3	5.5	87
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	18	P1408_004_Zrn_A_1_RAD_17	1126	343	3.28	19.9894	6.8	0.0403	6.7	0.0058	0.6	0.06	37.5	0.7	40.1	2.6	196.2	159.0	37.5	0.7	65
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	19	P1408_004_Zrn_A_1_RAD_18	820	205	4.00	17.2609	2.2	0.6819	2.6	0.0854	8.5	0.57	528.1	10.6	527.9	10.7	527.3	47.8	528.1	10.6	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	20	P1408_004_Zrn_A_1_RAD_19	1043	304	3.43	19.6033	5.8	0.0469	5.9	0.0067	0.7	0.28	42.8	1.2	46.5	2.7	241.4	133.4	42.8	1.2	55
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	21	P1408_004_Zrn_A_1_RAD_20	1407	277	5.08	17.9240	2.4	0.6124	2.7	0.0796	8.0	0.55	493.8	11.6	485.0	10.2	444.1	52.7	485.0	10.2	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	22	P1408_004_Zrn_A_1_RAD_21	706	203	3.47	20.3242	8.2	0.0435	8.7	0.0064	0.6	0.36	41.2	1.5	43.3	3.7	157.5	169.1	41.2	1.5	65
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	23	P1408_004_Zrn_A_1_RAD_22	682	200	3.41	20.5564	6.9	0.0431	6.6	0.0064	0.6	0.06	41.2	1.1	42.8	2.8	130.8	143.1	41.2	1.1	58
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	24	P1408_004_Zrn_A_1_RAD_23	104	27	3.77	18.6778	13.2	0.1128	13.0	0.0153	1.5	0.05	97.8	3.2	108.6	13.4	351.7	301.6	97.8	3.2	55
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	25	P1408_004_Zrn_A_1_RAD_24	823	123	6.72	20.2602	6.9	0.0432	6.6	0.0063	0.6	0.20	40.7	1.6	42.9	2.8	164.9	159.7	40.7	1.6	55
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	26	P1408_004_Zrn_A_1_RAD_25	458	77	5.92	17.3689	2.2	0.6426	2.4	0.0810	8.1	0.40	501.8	7.8	503.9	9.7	513.6	49.4	501.8	7.8	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	27	P1408_004_Zrn_A_1_RAD_26	607	148	4.10	15.2029	1.8	1.2714	2.1	0.1402	14.0	0.58	845.7	13.9	833.0	12.2	799.3	36.7	833.0	12.2	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	28	P1408_004_Zrn_A_1_RAD_27	443	26	16.73	19.8401	14.0	0.0427	14.0	0.0062	0.6	0.07	39.5	1.1	42.5	5.8	213.6	254.8	39.5	1.1	84
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	29	P1408_004_Zrn_A_1_RAD_28	249	35	7.15	17.2579	4.7	0.6340	4.6	0.0793	7.9	0.13	492.2	8.3	498.6	18.2	527.7	102.3	492.2	8.3	94
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	30	P1408_004_Zrn_A_1_RAD_29	629	72	8.73	17.7756	2.8	0.4199	2.9	0.0541	5.4	0.29	339.9	5.4	356.0	8.7	462.5	62.4	339.9	5.4	94
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	31	P1408_004_Zrn_A_1_RAD_30	658	18	37.53	16.0922	2.3	0.7595	2.8	0.0886	8.9	0.58	547.5	11.2	573.7	12.1	679.0	48.3	547.5	11.2	68
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	32	P1408_004_Zrn_A_1_RAD_31	297	193	1.54	17.1705	3.2	0.6980	3.2	0.0869	8.7	0.30	537.3	10.3	537.6	13.5	538.8	69.2	537.3	10.3	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	33	P1408_004_Zrn_A_1_RAD_32	1230	309	3.99	17.5853	2.0	0.6334	2.1	0.0808	8.1	0.41	500.8	8.7	498.2	8.3	486.3	44.0	498.2	8.3	97
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	34	P1408_004_Zrn_A_1_RAD_33	746	46	16.08	19.9580	18.0	0.0420	18.0	0.0061	0.6	0.06	39.1	0.9	41.8	7.3	199.9	285.4	39.1	0.9	68
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	35	P1408_004_Zrn_A_1_RAD_34	175	61	2.88	19.3477	11.3	0.0898	11.1	0.0126	1.3	0.03	80.7	2.1	87.3	9.3	271.5	255.6	80.7	2.1	77
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	36	P1408_004_Zrn_A_1_RAD_35	978	50	19.53	17.6911	2.5	0.6545	2.4	0.0840	8.4	0.37	519.8	11.3	511.2	9.6	473.1	55.1	511.2	9.6	97
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	37	P1408_004_Zrn_A_1_RAD_36	561	192	2.92	15.2053	1.8	1.2301	2.0	0.1357	13.6	0.49	820.0	12.6	814.4	11.4	799.0	37.4	814.4	11.4	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	38	P1408_004_Zrn_A_1_RAD_37	511	108	4.72	16.0396	2.8	0.9815	3.2	0.1142	11.4	0.50	696.9	16.5	694.4	15.9	686.0	60.2	694.4	15.9	94
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	39	P1408_004_Zrn_A_1_RAD_38	712	115	6.19	19.3015	6.8	0.0426	6.7	0.0060	0.6	0.25	38.4	1.4	42.4	2.8	277.0	155.4	38.4	1.4	71
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	40	P1408_004_Zrn_A_1_RAD_39	501	152	3.30	12.8811	2.0	1.9005	2.4	0.1775	17.8	0.52	1053.6	18.5	1081.3	15.7	1137.5	40.5	1081.3	15.7	94

27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	41	P1408_004_Zrn_A_1_RAD_40	449	47	9.51	17.7617	5.6	0.6481	5.0	0.0835	8.4	0.17	516.9	18.8	507.3	19.9	464.3	125.3	516.9	18.8	97
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	42	P1408_004_Zrn_A_1_RAD_41	351	107	3.28	17.1637	3.4	0.6682	3.4	0.0832	8.3	0.32	515.1	11.8	519.6	13.9	539.6	74.1	515.1	11.8	97
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	43	P1408_004_Zrn_A_1_RAD_42	1530	381	4.01	21.9295	8.1	0.0369	8.1	0.0059	0.6	0.24	37.8	1.5	36.8	2.9	0.0	81.2	37.8	1.5	35
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	44	P1408_004_Zrn_A_1_RAD_43	76	37	2.03	12.3335	3.4	2.1308	3.6	0.1906	19.1	0.43	1124.6	26.8	1158.9	25.2	1223.4	66.4	1158.9	25.2	94
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	45	P1408_004_Zrn_A_1_RAD_44	1360	551	2.47	17.3155	2.1	0.6127	2.2	0.0769	7.7	0.37	477.8	8.2	485.2	8.5	520.4	46.6	477.8	8.2	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	46	P1408_004_Zrn_A_1_RAD_45	503	173	2.90	17.7012	2.7	0.6070	2.9	0.0779	7.8	0.39	483.7	8.7	481.6	11.1	471.8	59.4	483.7	8.7	97
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	47	P1408_004_Zrn_A_1_RAD_46	408	93	4.41	13.0632	2.2	1.7993	2.4	0.1705	17.1	0.45	1014.7	18.6	1045.2	15.5	1109.5	44.0	1045.2	15.5	94
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	48	P1408_004_Zrn_A_1_RAD_47	182	111	1.64	13.6656	2.8	1.8180	3.0	0.1802	18.0	0.45	1068.0	22.4	1052.0	19.9	1018.8	56.3	1052.0	19.9	97
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	49	P1408_004_Zrn_A_1_RAD_48	97	59	1.64	12.6722	3.0	2.1662	2.8	0.1991	19.9	0.24	1170.4	21.8	1170.3	19.7	1170.0	58.5	1170.3	19.7	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	50	P1408_004_Zrn_A_1_RAD_49	390	95	4.10	19.1133	10.8	0.0556	10.7	0.0077	0.8	0.06	49.5	1.2	55.0	5.7	299.4	248.4	49.5	1.2	81
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	51	P1408_004_Zrn_A_1_RAD_50	148	32	4.56	21.2467	13.3	0.0945	13.0	0.0146	1.5	0.03	93.2	3.1	91.7	11.4	52.6	171.6	93.2	3.1	81
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	52	P1408_004_Zrn_A_1_RAD_51	359	148	2.42	15.2199	4.8	1.1907	4.1	0.1314	13.1	0.18	796.0	26.6	796.3	22.7	796.9	101.3	796.3	22.7	97
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	53	P1408_004_Zrn_A_1_RAD_52	214	50	4.31	16.7200	4.2	0.6797	4.1	0.0824	8.2	0.24	510.6	13.1	526.6	16.7	596.7	91.6	510.6	13.1	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	54	P1408_004_Zrn_A_1_RAD_53	102	49	2.07	17.6429	5.4	0.6548	5.3	0.0838	8.4	0.12	518.7	11.1	511.4	21.2	479.1	119.2	518.7	11.1	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	55	P1408_004_Zrn_A_1_RAD_54	106	58	1.83	19.0106	17.9	0.0562	17.7	0.0078	0.8	0.05	49.8	1.9	55.5	9.5	311.7	337.0	49.8	1.9	84
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	56	P1408_004_Zrn_A_1_RAD_55	1088	221	4.92	20.7586	7.7	0.0414	7.8	0.0062	0.6	0.21	40.1	1.3	41.2	3.1	107.8	140.2	40.1	1.3	42
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	57	P1408_004_Zrn_A_1_RAD_56	110	29	3.81	19.9738	25.7	0.0626	25.2	0.0091	0.9	0.03	58.2	3.3	61.7	15.1	198.0	353.0	58.2	3.3	58
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	58	P1408_004_Zrn_A_1_RAD_57	1289	215	5.99	17.6049	2.2	0.6116	2.3	0.0781	7.8	0.40	484.7	9.2	484.6	8.8	483.9	48.8	484.6	8.8	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	59	P1408_004_Zrn_A_1_RAD_58	50	10	4.98	17.5416	6.8	0.6986	6.9	0.0889	8.9	0.19	548.9	13.4	538.0	28.8	491.8	151.0	548.9	13.4	81
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	60	P1408_004_Zrn_A_1_RAD_59	726	78	9.29	15.1664	2.3	1.2462	2.5	0.1371	13.7	0.35	828.1	12.5	821.7	13.9	804.3	48.9	828.1	12.5	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	61	P1408_004_Zrn_A_1_RAD_60	168	37	4.52	11.5086	2.4	2.7375	2.4	0.2285	22.9	0.36	1326.6	24.8	1338.7	18.0	1358.1	46.8	1338.7	18.0	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	62	P1408_004_Zrn_A_1_RAD_61	56	19	2.92	18.0533	25.6	0.1120	25.2	0.0147	1.5	0.04	93.9	5.3	107.8	25.8	428.1	458.2	93.9	5.3	65
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	63	P1408_004_Zrn_A_1_RAD_62	565	103	5.47	15.4914	2.3	1.1113	2.2	0.1249	12.5	0.26	758.4	11.7	758.8	12.0	759.8	47.6	758.4	11.7	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	64	P1408_004_Zrn_A_1_RAD_63	151	45	3.38	18.2674	4.5	0.6184	4.5	0.0819	8.2	0.19	507.6	9.2	488.8	17.4	401.7	100.0	507.6	9.2	84
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	65	P1408_004_Zrn_A_1_RAD_64	107	38	2.83	11.0823	2.4	3.1111	2.9	0.2501	25.0	0.54	1438.8	27.7	1435.4	22.1	1430.5	46.7	1435.4	22.1	100
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	66	P1408_004_Zrn_A_1_RAD_65	173	69	2.51	17.3519	4.4	0.6527	4.5	0.0821	8.2	0.30	508.9	13.4	510.1	18.0	515.7	97.4	508.9	13.4	87
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	67	P1408_004_Zrn_A_1_RAD_66	485	160	3.04	18.5874	9.8	0.0476	9.6	0.0064	0.6	0.08	41.2	1.3	47.2	4.4	362.7	222.1	41.2	1.3	45
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	68	P1408_004_Zrn_A_1_RAD_67	100	47	2.12	13.8635	4.0	1.7515	4.1	0.1761	17.6	0.31	1045.7	20.8	1027.7	26.7	989.7	80.6	1045.7	20.8	97
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	69	P1408_004_Zrn_A_1_RAD_68	354	74	4.80	18.0290	2.4	0.6494	2.6	0.0849	8.5	0.39	525.4	9.2	508.1	10.3	431.1	54.1	525.4	9.2	77
27.678317	94.682618	LIKABALI	MIDDLE SIWALIK	25c	70	P1408_004_Zrn_A_1_RAD_69	873	251	3.47	18.3511	2.6	0.6117	2.9	0.0814	8.1	0.52	504.6	11.3	484.6	11.4	391.5	57.4	504.6	11.3	100

27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	1	P1408_002_Zrn_A_1_RAD_0	226	91	2.47	22.1486	34.2	0.0522	34.1	0.0084	0.8	0.02	53.8	1.9	51.7	17.2	0.0	312.6	53.8	1.9	42
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	2	P1408_002_Zrn_A_1_RAD_1	106	39	2.72	18.7875	10.4	0.0998	10.0	0.0136	1.4	0.03	87.1	2.8	96.6	9.3	338.5	238.3	87.1	2.8	97
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	3	P1408_002_Zrn_A_1_RAD_2	107	34	3.18	17.2156	4.4	0.7051	4.5	0.0880	8.8	0.22	544.0	10.0	541.9	18.8	533.0	97.3	544.0	10.0	100
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	4	P1408_002_Zrn_A_1_RAD_3	371	52	7.11	18.7840	6.8	0.0903	6.7	0.0123	1.2	0.11	78.8	1.9	87.7	5.6	338.9	154.7	78.8	1.9	100
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	5	P1408_002_Zrn_A_1_RAD_4	131	25	5.23	16.4798	10.4	0.1253	10.1	0.0150	1.5	0.06	95.8	3.0	119.9	11.4	627.9	225.2	95.8	3.0	52
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	6	P1408_002_Zrn_A_1_RAD_5	114	52	2.21	18.1952	10.9	0.1066	11.0	0.0141	1.4	0.14	90.1	2.2	102.9	10.8	410.6	246.0	90.1	2.2	74
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	7	P1408_002_Zrn_A_1_RAD_7	1838	530	3.47	20.3247	4.0	0.0512	4.0	0.0076	0.8	0.33	48.5	1.3	50.7	2.0	157.4	93.8	48.5	1.3	42
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	8	P1408_002_Zrn_A_1_RAD_8	420	146	2.88	19.4562	8.6	0.0483	8.4	0.0068	0.7	0.22	43.8	2.0	47.9	3.9	258.7	199.2	43.8	2.0	77
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	9	P1408_002_Zrn_A_1_RAD_9	78	25	3.08	21.8491	21.6	0.0895	21.5	0.0142	1.4	0.03	90.8	2.8	87.0	17.9	0.0	219.3	90.8	2.8	87
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	10	P1408_002_Zrn_A_1_RAD_10	60	38	1.58	13.7562	3.5	1.8004	3.9	0.1796	18.0	0.44	1064.9	23.8	1045.6	25.2	1005.4	71.6	1064.9	23.8	68
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	11	P1408_002_Zrn_A_1_RAD_11	397	181	2.20	20.3840	6.4	0.0731	6.5	0.0108	1.1	0.27	69.3	2.1	71.7	4.5	150.6	147.0	69.3	2.1	68
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	12	P1408_002_Zrn_A_1_RAD_12	379	88	4.30	13.3424	2.3	1.6347	2.5	0.1582	15.8	0.37	946.7	12.8	983.7	15.7	1067.1	47.1	946.7	12.8	81
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	13	P1408_002_Zrn_A_1_RAD_13	148	36	4.10	18.5754	13.8	0.0951	13.3	0.0128	1.3	0.05	82.0	3.6	92.2	11.8	364.1	315.6	82.0	3.6	74
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	14	P1408_002_Zrn_A_1_RAD_14	103	32	3.23	21.7207	14.4	0.0894	14.0	0.0141	1.4	0.03	90.1	3.4	86.9	11.7	0.1	157.6	90.1	3.4	65
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	15	P1408_002_Zrn_A_1_RAD_15	153	21	7.16	17.8714	6.9	0.2182	6.9	0.0283	2.8	0.19	179.7	4.4	200.4	12.6	450.6	153.1	179.7	4.4	90
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	16	P1408_002_Zrn_A_1_RAD_16	233	58	4.00	19.1347	5.8	0.1011	5.4	0.0140	1.4	0.15	89.8	2.8	97.8	5.1	296.9	133.5	89.8	2.8	61
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	17	P1408_002_Zrn_A_1_RAD_17	79	26	3.04	17.8269	21.0	0.0671	20.7	0.0087	0.9	0.02	55.7	2.4	66.0	13.2	456.1	432.5	55.7	2.4	61
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	18	P1408_002_Zrn_A_1_RAD_18	497	86	5.76	19.7232	48.3	0.1111	48.3	0.0159	1.6	0.02	101.7	1.9	107.0	49.1	227.3	537.0	101.7	1.9	90
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	19	P1408_002_Zrn_A_1_RAD_19	154	79	1.96	19.2311	7.7	0.1029	7.2	0.0144	1.4	0.10	91.9	3.3	99.5	6.8	285.4	177.8	91.9	3.3	81
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	20	P1408_002_Zrn_A_1_RAD_20	227	47	4.88	17.7944	2.9	0.6136	2.9	0.0792	7.9	0.21	491.2	7.1	485.8	11.3	460.2	65.4	491.2	7.1	90
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	21	P1408_002_Zrn_A_1_RAD_21	99	44	2.23	19.2379	12.2	0.0972	11.6	0.0136	1.4	0.10	86.9	4.3	94.2	10.5	284.6	270.8	86.9	4.3	42
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	22	P1408_002_Zrn_A_1_RAD_22	161	80	2.02	20.4493	11.7	0.0968	11.4	0.0144	1.4	0.06	91.9	3.1	93.8	10.2	143.1	198.2	91.9	3.1	68
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	23	P1408_002_Zrn_A_1_RAD_23	749	11	66.59	19.6910	4.0	0.0938	3.9	0.0134	1.3	0.13	85.8	1.4	91.1	3.4	231.1	91.8	85.8	1.4	94
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	24	P1408_002_Zrn_A_1_RAD_24	287	89	3.21	20.0768	6.9	0.0990	6.9	0.0144	1.4	0.20	92.3	2.6	95.9	6.3	186.1	161.2	92.3	2.6	74
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	25	P1408_002_Zrn_A_1_RAD_25	68	21	3.32	21.0355	20.7	0.1030	20.5	0.0157	1.6	0.05	100.5	4.4	99.6	19.4	76.4	253.1	100.5	4.4	90
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	26	P1408_002_Zrn_A_1_RAD_26	214	90	2.38	19.6396	10.0	0.0982	9.7	0.0140	1.4	0.09	89.6	2.9	95.1	8.8	237.1	225.9	89.6	2.9	68
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	27	P1408_002_Zrn_A_1_RAD_27	1082	30	36.21	16.2857	2.2	0.8668	2.6	0.1024	10.2	0.60	628.4	13.0	633.8	12.5	653.4	46.5	633.8	12.5	94
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	28	P1408_002_Zrn_A_1_RAD_28	254	119	2.13	19.9474	8.4	0.0983	8.3	0.0142	1.4	0.12	91.1	2.3	95.2	7.5	201.1	192.2	91.1	2.3	65
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	29	P1408_002_Zrn_A_1_RAD_29	708	260	2.72	12.4157	1.9	2.1400	2.1	0.1927	19.3	0.46	1136.0	17.2	1161.8	14.6	1210.3	38.3	1161.8	14.6	100
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	30	P1408_002_Zrn_A_1_RAD_30	270	127	2.12	12.6267	1.8	2.0986	2.0	0.1922	19.2	0.49	1133.2	16.2	1148.3	13.9	1177.1	35.8	1148.3	13.9	94
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	31	P1408_002_Zrn_A_1_RAD_31	90	39	2.33	18.1317	24.5	0.1176	24.3	0.0155	1.5	0.02	99.0	3.9	112.9	26.0	418.4	444.5	99.0	3.9	77
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	32	P1408_002_Zrn_A_1_RAD_32	222	106	2.10	18.6412	13.0	0.0636	13.0	0.0086	0.9	0.13	55.2	1.9	62.6	7.9	356.2	297.6	55.2	1.9	55
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	33	P1408_002_Zrn_A_1_RAD_33	92	39	2.35	18.7207	10.9	0.1094	10.7	0.0149	1.5	0.11	95.1	3.6	105.4	10.7	346.5	249.3	95.1	3.6	61
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	34	P1408_002_Zrn_A_1_RAD_34	710	229	3.11	21.0882	8.7	0.0489	8.4	0.0075	0.7	0.09	48.1	1.4	48.5	4.0	70.4	132.2	48.1	1.4	55
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	35	P1408_002_Zrn_A_1_RAD_35	1062	106	10.03	20.4121	7.7	0.0524	8.0	0.0078	0.8	0.47	49.8	3.4	51.9	4.0	147.4	159.0	49.8	3.4	42
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	36	P1408_002_Zrn_A_1_RAD_36	127	52	2.47	20.1813	8.2	0.1425	8.1	0.0209	2.1	0.11	133.1	3.0	135.3	10.3	174.0	177.3	133.1	3.0	68
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	37	P1408_002_Zrn_A_1_RAD_37	762	247	3.08	16.8347	2.0	0.6579	2.3	0.0803	8.0	0.48	498.1	7.3	513.3	9.2	581.8	43.8	498.1	7.3	97
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	38	P1408_002_Zrn_A_1_RAD_38	1043	183	5.70	15.2619	1.6	1.2103	2.3	0.1340	13.4	0.70	810.5	15.2	805.3	12.5	791.2	34.1	805.3	12.5	90
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	39	P1408_002_Zrn_A_1_RAD_39	497	10	50.54	14.8676	1.9	1.1354	2.3	0.1224	12.2	0.59	744.5	13.8	770.3	12.3	845.8	39.5	770.3	12.3	74
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	40	P1408_002_Zrn_A_1_RAD_40	125	73	1.72	20.2991	17.9	0.0998	17.7	0.0147	1.5	0.06	94.0	3.4	96.6	16.3	160.4	266.0	94.0	3.4	55
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	41	P1408_002_Zrn_A_1_RAD_41	95	36	2.60	18.2919	11.0	0.1099	10.7	0.0146	1.5	0.06	93.3	3.3	105.9	10.7	398.7	248.6	93.3	3.3	71
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	42	P1408_002_Zrn_A_1_RAD_42	324	90	3.59	18.0517	8.7	0.1046	8.6	0.0137	1.4	0.08	87.7	2.0	101.1	8.3	428.3	195.0	87.7	2.0	77
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	43	P1408_002_Zrn_A_1_RAD_43	157	96	1.63	15.6393	4.3	1.0657	4.4	0.1209	12.1	0.28	735.6	17.0	736.6	22.9	739.7	92.0	735.6	17.0	94
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	44	P1408_002_Zrn_A_1_RAD_44	492	28	17.83	13.3881	2.0	1.8610	2.2	0.1807	18.1	0.48	1070.8	17.8	1067.3	14.3	1060.3	40.1	1067.3	14.3	97
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	45	P1408_002_Zrn_A_1_RAD_45	156	68	2.30	10.3521	2.1	3.5687	2.5	0.2679	26.8	0.58	1530.3	27.5	1542.6	20.2	1559.4	39.6	1542.6	20.2	100
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	46	P1408_002_Zrn_A_1_RAD_46	608	250	2.43	12.6127	1.5	2.1664	1.8	0.1982	19.8	0.55	1165.5	14.3	1170.3	12.8	1179.3	30.3	1170.3	12.8	100
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	47	P1408_002_Zrn_A_1_RAD_47	700	59	11.91	12.4518	1.9	2.1033	2.3	0.1899	19.0	0.60	1121.1	20.9	1149.9	15.7	1204.6	37.5	1149.9	15.7	94
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	48	P1408_002_Zrn_A_1_RAD_48	339	41	8.37	7.6001	2.1	6.5477	2.2	0.3609	36.1	0.43	1986.5	31.1	2052.3	19.0	2119.1	36.5	2052.3	19.0	100
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	49	P1408_002_Zrn_A_1_RAD_49	66	26	2.58	18.6923	46.3	0.1014	46.1	0.0138	1.4	0.00	88.0	3.6	98.1	43.2	350.0	576.8	88.0	3.6	87
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	50	P1408_002_Zrn_A_1_RAD_50	80	19	4.31	20.7968	22.6	0.0875	21.8	0.0132	1.3	0.06	84.5	6.2	85.2	17.8	103.4	282.9	84.5	6.2	55
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	51	P1408_002_Zrn_A_1_RAD_51	307	173	1.77	5.0344	1.3	14.6512	1.7	0.5350	53.5	0.63	2762.3	30.6	2792.9	15.7	2815.0	21.0	2792.9	15.7	90
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	52	P1408_002_Zrn_A_1_RAD_52	335	90	3.74	13.6051	2.1	1.6483	2.1	0.1626	16.3	0.26	971.4	11.8	988.9	13.2	1027.8	42.0	971.4	11.8	100
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	53	P1408_002_Zrn_A_1_RAD_53	270	87	3.11	20.0936	10.0	0.0999	9.9	0.0146	1.5	0.06	93.2	1.7	96.7	9.1	184.1	200.6	93.2	1.7	77
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	54	P1408_002_Zrn_A_1_RAD_54	422	126	3.36	19.2728	5.1	0.1499	5.2	0.0209	2.1	0.24	133.6	2.6	141.8	6.9	280.4	116.0	133.6	2.6	81
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	55	P1408_002_Zrn_A_1_RAD_55	220	81	2.71	20.9359	12.7	0.0944	12.6	0.0143	1.4	0.03	91.8	2.2	91.6	11.0	87.6	182.5	91.8	2.2	81
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	56	P1408_002_Zrn_A_1_RAD_56	99	23	4.22	21.5108	27.7	0.0597	27.5	0.0093	0.9	0.01	59.8	2.4	58.9	15.7	23.0	290.6	59.8	2.4	84
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	57	P1408_002_Zrn_A_1_RAD_57	46	68	0.67	12.5111	2.6	2.2199	2.7	0.2014	20.1	0.41	1183.0	21.7	1187.3	18.9	1195.2	50.7	1187.3	18.9	97
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	58	P1408_002_Zrn_A_1_RAD_58	180	45	3.98	20.9402	6.3	0.1602	6.3	0.0243	2.4	0.17	154.9	3.7	150.8	8.8	87.2	115.6	154.9	3.7	87
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	59	P1408_002_Zrn_A_1_RAD_59	80	25	3.25	19.9432	25.7	0.1000	25.3	0.0145	1.4	0.04	92.6	5.5	96.8	23.3	201.6	354.8	92.6	5.5	45
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	60	P1408_002_Zrn_A_1_RAD_60	189	82	2.31	19.7997	11.2	0.0639	11.0	0.0092	0.9	0.16	58.9	2.6	62.9	6.7	218.3	228.9	58.9	2.6	52
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	61	P1408_002_Zrn_A_1_RAD_61	278	46	6.03	12.7531	2.5	2.0381	3.9	0.1885	18.9	0.77	1113.3	33.2	1128.3	26.3	1157.3	49.0	1128.3	26.3	97
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	62	P1408_002_Zrn_A_1_RAD_62	694	83	8.34	20.2988	6.7	0.0380	6.7	0.0056	0.6	0.17	35.9	0.8	37.8	2.5	160.4	154.8	35.9	0.8	77

27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	63	P1408_002_Zrn_A_1_RAD_63	181	69	2.60	20.7615	10.5	0.0730	10.5	0.0110	1.1	0.09	70.5	1.5	71.6	7.2	107.4	169.2	70.5	1.5	77
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	64	P1408_002_Zrn_A_1_RAD_64	363	131	2.77	21.4973	9.7	0.0505	9.5	0.0079	0.8	0.13	50.5	1.7	50.0	4.7	24.5	121.0	50.5	1.7	81
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	65	P1408_002_Zrn_A_1_RAD_65	188	67	2.80	17.2646	15.8	0.0683	15.4	0.0085	0.9	0.08	54.9	2.8	67.1	10.0	526.8	352.5	54.9	2.8	77
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	66	P1408_002_Zrn_A_1_RAD_66	256	139	1.84	19.8499	9.5	0.0574	9.2	0.0083	0.8	0.07	53.1	1.8	56.7	5.1	212.5	209.8	53.1	1.8	71
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	67	P1408_002_Zrn_A_1_RAD_67	263	123	2.14	12.6695	2.0	2.0987	1.9	0.1928	19.3	0.23	1136.8	14.7	1148.4	12.9	1170.4	39.2	1148.4	12.9	97
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	68	P1408_002_Zrn_A_1_RAD_68	850	326	2.60	18.4278	7.9	0.0602	7.8	0.0080	0.8	0.10	51.7	1.1	59.4	4.5	382.1	178.1	51.7	1.1	71
27.670815	94.683994	LIKABALI	MIDDLE SIWALIK	5b	69	P1408_002_Zrn_A_1_RAD_69	134	54	2.48	19.9261	14.6	0.1102	14.5	0.0159	1.6	0.07	101.9	3.2	106.2	14.6	203.6	255.5	101.9	3.2	52

2.10.2 Compilation of bedrock geochronology

TABLE A2. COMPILED BEDROCK U/PB AGES < 300 Ma

TYPE	LOCATION	PREFERRED AGE (Ma)	SOURCE
BEDROCK	BOMI CHAYU AREA	57	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	65.7	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	55.9	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	58	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	62	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	162	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	60.9	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	120	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	117	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	118	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	122	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	119.1	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	116	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	126	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	122	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	125	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	127	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	125	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	125	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	127	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	132	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	125	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	109	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	109	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	110	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	107	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	111	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	114	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	110	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	106	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	115	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	108	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	107	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	111	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	107	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	110	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	110	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	115	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	110	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	116	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	109	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	114	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	113	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	111	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	127	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	116	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	123	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	122	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	125	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	121	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	122	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	121	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	114	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	116	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	115	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	116	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	114	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	118	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	121	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	118	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	117	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	118	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	116	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	50	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	54	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	59	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	55	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	58	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	58	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	60	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	70	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	61	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	55	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	80	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	58	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	67	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	130	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	132	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	135	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	137	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	132	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	131	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	132	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	131	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	135	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	134	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	135	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	132	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	131	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	133	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	134	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	126	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	133	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	134	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	129	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	132	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	134	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	132	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	131	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	133	Liang et al., 2008
BEDROCK	BOMI CHAYU AREA	117	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	130	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	118	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	118	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	124	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	128	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	127	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	121	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	128	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	125	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	129	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	125	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	127	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	129	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	157	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	123	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	123	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	125	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	125	Xu et al., 2012b
BEDROCK	BOMI CHAYU AREA	122	Xu et al., 2012b
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BEDROCK	BOMI CHAYU AREA	116	Xu et al., 2012b
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BEDROCK	BOMI CHAYU AREA	128	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	128	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	227	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	130	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	131	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	132	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	198	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	196	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	195	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	199	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	196	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	195	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	195	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	198	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	217	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	198	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	121	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	113	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	118	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	117	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	117	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	115	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	126	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	125	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	127	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	126	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	123	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	122	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	124	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	123	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	124	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	125	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	123	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	124	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	122	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	123	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	121	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	121	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	124	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	124	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	121	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	120	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	124	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	125	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	120	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	121	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	129	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	128	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	130	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	127	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	126	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	127	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	128	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	128	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	129	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	128	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	126	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	128	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	128	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	128	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	130	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	126	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	127	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	126	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	56.6	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	65.7	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	55.9	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	57.7	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	61.9	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	60.9	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	120	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	117.4	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	118	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	122	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	119.1	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	116	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	68.7	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	68	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	65.5	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	67.5	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	66.1	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	65.5	Chiu et al., 2009

BEDROCK	BOMI CHAYU AREA	122	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	125	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	127	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	124.8	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	125	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	127	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	125	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	108.5	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	108.8	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	109.5	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	106.5	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	111.1	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	113.5	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	110	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	115.4	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	108.2	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	107.1	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	111.3	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	106.9	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	109.9	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	110.4	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	115	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	116	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	114	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	113.2	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	116.1	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	126	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	126	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	125	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	124	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	125	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	126	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	124	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	126	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	124	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	125	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	137	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	123	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	124	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	135	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	121	Chiu et al., 2009

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BEDROCK	BOMI CHAYU AREA	124	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	124	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	119	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	123	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	123	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	123	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	121	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	123	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	124	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	123	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	123	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	123	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	122	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	125	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	122.4	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	121.3	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	115.9	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	114.5	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	116.1	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	121.4	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	117.5	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	116.7	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	118.4	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	58.4	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	58.2	Chiu et al., 2009

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BEDROCK	BOMI CHAYU AREA	56.4	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	56.6	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	119	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	56	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	56.5	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	57.2	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	56	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	56.7	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	56.7	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	56.9	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	136.6	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	132.4	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	131.2	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	130.6	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	135.2	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	133.6	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	135.3	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	131.7	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	131	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	130	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	127	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	129	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	130	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	130	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	131	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	132	Chiu et al., 2009

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BEDROCK	BOMI CHAYU AREA	132	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	131	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	132	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	130	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	132	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	131	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	132	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	134	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	134	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	133	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	131	Chiu et al., 2009
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BEDROCK	BOMI CHAYU AREA	132	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	134	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	131	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	133	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	131	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	132	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	135	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	134	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	131.4	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	132.8	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	134.2	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	133.2	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	134	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	132.1	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	134.3	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	132.3	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	131.1	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	132.7	Chiu et al., 2009
BEDROCK	BOMI CHAYU AREA	149	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	145	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	144	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	150	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	144	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	149	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	150	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	146	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	144	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	150	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	146	Lin et al., 2013b

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BEDROCK	BOMI CHAYU AREA	149	Lin et al., 2013b
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BEDROCK	BOMI CHAYU AREA	148	Lin et al., 2013b
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BEDROCK	BOMI CHAYU AREA	104	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	93	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	97	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	101	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	92	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	97	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	95	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	96	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	99	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	95	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	99	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	98	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	95	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	94	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	93	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	98	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	98	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	97	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	97	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	99	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	101	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	96	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	95	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	98	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	98	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	98	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	99	Lin et al., 2013b
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BEDROCK	BOMI CHAYU AREA	98	Lin et al., 2013b
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BEDROCK	BOMI CHAYU AREA	98	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	99	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	99	Lin et al., 2013b
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BEDROCK	BOMI CHAYU AREA	95	Lin et al., 2013b
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BEDROCK	BOMI CHAYU AREA	99	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	102	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	96	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	107	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	91	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	95	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	109	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	100	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	98	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	95	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	99	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	108	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	98	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	98	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	94	Lin et al., 2013b
BEDROCK	BOMI CHAYU AREA	95	Lin et al., 2013b
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BEDROCK	EASTERN HIM/NBM	18	Booth et al., 2004
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BEDROCK	EASTERN HIM/NBM	3.6	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	2.8	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	3.1	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	3.6	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	3.8	Booth et al., 2004
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BEDROCK	EASTERN HIM/NBM	13.4	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	9.8	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	9.3	Booth et al., 2004
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BEDROCK	EASTERN HIM/NBM	9.8	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	10	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	9.3	Booth et al., 2004
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BEDROCK	EASTERN HIM/NBM	6.3	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	6.4	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	6.3	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	6.4	Booth et al., 2004
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BEDROCK	EASTERN HIM/NBM	6.6	Booth et al., 2004
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BEDROCK	EASTERN HIM/NBM	4.8	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	5.8	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	4	Booth et al., 2004
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BEDROCK	EASTERN HIM/NBM	2.8	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	2.9	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	3	Booth et al., 2004
BEDROCK	GANGDESE	57.6	Booth et al., 2004
BEDROCK	GANGDESE	39.7	Booth et al., 2004
BEDROCK	GANGDESE	53.7	Booth et al., 2004
BEDROCK	GANGDESE	53	Booth et al., 2004
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BEDROCK	GANGDESE	41.2	Booth et al., 2004
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BEDROCK	EASTERN HIM/NBM	22.6	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	26	Booth et al., 2004
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BEDROCK	EASTERN HIM/NBM	22.7	Booth et al., 2004
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BEDROCK	EASTERN HIM/NBM	70.7	Booth et al., 2004
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BEDROCK	EASTERN HIM/NBM	24.1	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	24.5	Booth et al., 2004
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BEDROCK	EASTERN HIM/NBM	24.3	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	42.9	Booth et al., 2004
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BEDROCK	EASTERN HIM/NBM	24.3	Booth et al., 2004
BEDROCK	EASTERN HIM/NBM	24	Booth et al., 2004
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BEDROCK	GANGDESE	63.3	Booth et al., 2004
BEDROCK	GANGDESE	63.4	Booth et al., 2004
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BEDROCK	GANGDESE	43	Booth et al., 2004
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BEDROCK	BOMI-CHAYU	116.5	Booth et al., 2004
BEDROCK	BOMI-CHAYU	111.1	Booth et al., 2004
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BEDROCK	GANGDESE AREA	30.6	Zhang et al., 2010b
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BEDROCK	GANGDESE AREA	34.3	Zhang et al., 2010b
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BEDROCK	GANGDESE AREA	164	Zhang et al., 2010b
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BEDROCK	GANGDESE AREA	167.2	Zhang et al., 2010b
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BEDROCK	GANGDESE AREA	193	Zhu et al., 2011
BEDROCK	GANGDESE AREA	193	Zhu et al., 2011
BEDROCK	GANGDESE AREA	195	Zhu et al., 2011
BEDROCK	GANGDESE AREA	227	Zhu et al., 2011
BEDROCK	GANGDESE AREA	196	Zhu et al., 2011
BEDROCK	GANGDESE AREA	193	Zhu et al., 2011
BEDROCK	GANGDESE AREA	191	Zhu et al., 2011
BEDROCK	GANGDESE AREA	191	Zhu et al., 2011
BEDROCK	GANGDESE AREA	190	Zhu et al., 2011
BEDROCK	GANGDESE AREA	166	Zhu et al., 2011
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BEDROCK	GANGDESE AREA	153	Zhu et al., 2011
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BEDROCK	GANGDESE AREA	131	Zhu et al., 2011
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BEDROCK	GANGDESE AREA	206	Zhu et al., 2011
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BEDROCK	GANGDESE AREA	218	Zhu et al., 2011
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BEDROCK	GANGDESE AREA	211	Zhu et al., 2011
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BEDROCK	GANGDESE AREA	195	Zhu et al., 2011
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BEDROCK	GANGDESE AREA	192	Zhu et al., 2011
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BEDROCK	GANGDESE AREA	192	Zhu et al., 2011
BEDROCK	GANGDESE AREA	192	Zhu et al., 2011
BEDROCK	GANGDESE AREA	192	Zhu et al., 2011
BEDROCK	GANGDESE AREA	198	Zhu et al., 2011
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BEDROCK	GANGDESE AREA	189	Zhu et al., 2011
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BEDROCK	GANGDESE AREA	188	Zhu et al., 2011
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BEDROCK	GANGDESE AREA	183	Zhu et al., 2011
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BEDROCK	GANGDESE AREA	204	Lin et al., 2013
BEDROCK	GANGDESE AREA	204	Lin et al., 2013

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BEDROCK	GANGDESE AREA	206	Lin et al., 2013
BEDROCK	GANGDESE AREA	207	Lin et al., 2013
BEDROCK	GANGDESE AREA	208	Lin et al., 2013
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BEDROCK	GANGDESE AREA	209	Lin et al., 2013
BEDROCK	GANGDESE AREA	210	Lin et al., 2013
BEDROCK	GANGDESE AREA	211	Lin et al., 2013
BEDROCK	GANGDESE AREA	211	Lin et al., 2013
BEDROCK	GANGDESE AREA	211	Zhu et al., 2009
BEDROCK	GANGDESE AREA	268	Zhu et al., 2009
BEDROCK	GANGDESE AREA	263	Zhu et al., 2009
BEDROCK	GANGDESE AREA	258	Zhu et al., 2009
BEDROCK	GANGDESE AREA	286	Zhu et al., 2009
BEDROCK	GANGDESE AREA	262	Zhu et al., 2009
BEDROCK	GANGDESE AREA	268	Zhu et al., 2009
BEDROCK	GANGDESE AREA	259	Zhu et al., 2009
BEDROCK	GANGDESE AREA	267	Zhu et al., 2009
BEDROCK	GANGDESE AREA	258	Zhu et al., 2009
BEDROCK	GANGDESE AREA	258	Zhu et al., 2009
BEDROCK	GANGDESE AREA	263	Zhu et al., 2009
BEDROCK	GANGDESE AREA	263	Zhu et al., 2009
BEDROCK	GANGDESE AREA	283	Zhu et al., 2009
BEDROCK	GANGDESE AREA	267	Zhu et al., 2009
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BEDROCK	GANGDESE AREA	262	Zhu et al., 2009
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BEDROCK	GANGDESE AREA	298.6	Li et al., 2013
BEDROCK	GANGDESE AREA	218	Li et al., 2013
BEDROCK	GANGDESE AREA	222.4	Li et al., 2013
BEDROCK	GANGDESE AREA	230	Li et al., 2013
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BEDROCK	GANGDESE AREA	296.3	Li et al., 2013
BEDROCK	GANGDESE AREA	289.6	Li et al. 2013
BEDROCK	GANGDESE AREA	295	Guo et al., 2011
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BEDROCK	GANGDESE AREA	61.4	Guo et al., 2011
BEDROCK	GANGDESE AREA	60	Guo et al., 2011
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BEDROCK	GANGDESE AREA	60.3	Guo et al., 2011
BEDROCK	GANGDESE AREA	61.5	Guo et al., 2011
BEDROCK	GANGDESE AREA	60	Guo et al., 2011
BEDROCK	GANGDESE AREA	62	Guo et al., 2011
BEDROCK	GANGDESE AREA	61.2	Guo et al., 2011
BEDROCK	GANGDESE AREA	61.5	Guo et al., 2011
BEDROCK	GANGDESE AREA	60.2	Guo et al., 2011
BEDROCK	GANGDESE AREA	61.7	Guo et al., 2011
BEDROCK	GANGDESE AREA	61.7	Guo et al., 2011
BEDROCK	GANGDESE AREA	146	Guo et al., 2011
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BEDROCK	GANGDESE AREA	81.7	Guo et al., 2011
BEDROCK	GANGDESE AREA	166	Guo et al., 2011
BEDROCK	GANGDESE AREA	80.4	Guo et al., 2011
BEDROCK	GANGDESE AREA	80.1	Guo et al., 2011
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BEDROCK	GANGDESE AREA	191	Guo et al., 2011
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BEDROCK	GANGDESE AREA	62.8	Guo et al., 2011
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BEDROCK	GANGDESE AREA	104	Guo et al., 2011
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BEDROCK	GANGDESE AREA	78.3	Guo et al., 2011
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BEDROCK	GANGDESE AREA	80.3	Guo et al., 2011
BEDROCK	GANGDESE AREA	73.4	Guo et al., 2011
BEDROCK	GANGDESE AREA	80.8	Guo et al., 2011
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BEDROCK	GANGDESE AREA	163	Guo et al., 2011
BEDROCK	GANGDESE AREA	50.9	Guo et al., 2011
BEDROCK	GANGDESE AREA	165	Guo et al., 2011
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BEDROCK	GANGDESE AREA	50.3	Guo et al., 2011
BEDROCK	GANGDESE AREA	50.5	Guo et al., 2011
BEDROCK	GANGDESE AREA	123	Guo et al., 2011
BEDROCK	GANGDESE AREA	50.9	Guo et al., 2011
BEDROCK	GANGDESE AREA	108	Guo et al., 2011
BEDROCK	GANGDESE AREA	51.5	Guo et al., 2011
BEDROCK	GANGDESE AREA	167	Guo et al., 2011
BEDROCK	GANGDESE AREA	163	Guo et al., 2011
BEDROCK	GANGDESE AREA	164	Guo et al., 2011
BEDROCK	GANGDESE AREA	51.3	Guo et al., 2011
BEDROCK	GANGDESE AREA	50	Guo et al., 2011
BEDROCK	GANGDESE AREA	49.3	Guo et al., 2011
BEDROCK	GANGDESE AREA	168	Guo et al., 2011
BEDROCK	GANGDESE AREA	50.6	Guo et al., 2011
BEDROCK	GANGDESE AREA	50.9	Guo et al., 2011
BEDROCK	GANGDESE AREA	160	Guo et al., 2011
BEDROCK	GANGDESE AREA	164	Guo et al., 2011
BEDROCK	GANGDESE AREA	159	Guo et al., 2011
BEDROCK	GANGDESE AREA	167	Guo et al., 2011
BEDROCK	GANGDESE AREA	165	Guo et al., 2011
BEDROCK	GANGDESE AREA	168	Guo et al., 2011
BEDROCK	GANGDESE AREA	165	Guo et al., 2011
BEDROCK	GANGDESE AREA	161	Guo et al., 2011
BEDROCK	GANGDESE AREA	166	Guo et al., 2011
BEDROCK	GANGDESE AREA	164	Guo et al., 2011
BEDROCK	GANGDESE AREA	164	Guo et al., 2011
BEDROCK	GANGDESE AREA	165	Guo et al., 2011
BEDROCK	GANGDESE AREA	164	Guo et al., 2011
BEDROCK	GANGDESE AREA	165	Guo et al., 2011
BEDROCK	GANGDESE AREA	169	Guo et al., 2011
BEDROCK	GANGDESE AREA	167	Guo et al., 2011
BEDROCK	GANGDESE AREA	166	Guo et al., 2011
BEDROCK	GANGDESE AREA	164	Guo et al., 2011
BEDROCK	GANGDESE AREA	169	Guo et al., 2011
BEDROCK	GANGDESE AREA	169	Guo et al., 2011
BEDROCK	GANGDESE AREA	166	Guo et al., 2011
BEDROCK	GANGDESE AREA	165	Guo et al., 2011
BEDROCK	GANGDESE AREA	168	Guo et al., 2011
BEDROCK	GANGDESE AREA	164	Guo et al., 2011
BEDROCK	GANGDESE AREA	164	Guo et al., 2011
BEDROCK	GANGDESE AREA	166	Guo et al., 2011
BEDROCK	GANGDESE AREA	167	Guo et al., 2011
BEDROCK	GANGDESE AREA	166	Guo et al., 2011
BEDROCK	GANGDESE AREA	168	Guo et al., 2011
BEDROCK	GANGDESE AREA	162	Guo et al., 2011
BEDROCK	GANGDESE AREA	164	Guo et al., 2011
BEDROCK	GANGDESE AREA	164	Guo et al., 2011
BEDROCK	GANGDESE AREA	164	Guo et al., 2011
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BEDROCK	GANGDESE AREA	61	Guo et al., 2012
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BEDROCK	GANGDESE AREA	64	Guo et al., 2012
BEDROCK	GANGDESE AREA	46	Guo et al., 2012

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BEDROCK	GANGDESE AREA	48	Zhang et al., 2010b
BEDROCK	GANGDESE AREA	48	Zhang et al., 2010b
BEDROCK	GANGDESE AREA	49	Zhang et al., 2010b
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BEDROCK	GANGDESE AREA	190	Liu et al., 2006 in Zhang et al., 2012
BEDROCK	GANGDESE AREA	193	Liu et al., 2006 in Zhang et al., 2012
BEDROCK	GANGDESE AREA	191	Lee et al., 2007 in Zhang et al., 2012
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BEDROCK	GANGDESE AREA	84.8	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	84.9	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	88.7	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	87.8	Zhang et al., 2010a
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BEDROCK	GANGDESE AREA	86.7	Zhang et al., 2010a
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BEDROCK	GANGDESE AREA	86.6	Zhang et al., 2010a
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BEDROCK	GANGDESE AREA	81.8	Zhang et al., 2010a
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BEDROCK	GANGDESE AREA	84.8	Zhang et al., 2010a
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BEDROCK	GANGDESE AREA	83.9	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	87.9	Zhang et al., 2010a
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BEDROCK	GANGDESE AREA	89.4	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	87.7	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	85.1	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	90.5	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	90.2	Zhang et al., 2010a
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BEDROCK	GANGDESE AREA	88.7	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	85.8	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	92.6	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	89.9	Zhang et al., 2010a
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BEDROCK	GANGDESE AREA	89.6	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	83.6	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	87.3	Zhang et al., 2010a
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BEDROCK	GANGDESE AREA	91	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	89.9	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	93.1	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	88.9	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	91.1	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	85.7	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	89	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	92.4	Zhang et al., 2010a
BEDROCK	GANGDESE AREA	85	Zhang et al., 2010a

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BEDROCK	GANGDESE AREA	59	Ji et al., 2012

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BEDROCK	GANGDESE AREA	195	Chiu et al., 2009
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BEDROCK	GANGDESE AREA	198	Chiu et al., 2009
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BEDROCK	GANGDESE AREA	193	Chu et al., 2006
BEDROCK	GANGDESE AREA	189	Chiu et al., 2009
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BEDROCK	EASTERN HIM/NBM	26.6	Chung et al., 2003
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BEDROCK	EASTERN HIM/NBM	27.3	Chung et al., 2003
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BEDROCK	EASTERN HIM/NBM	28.7	Xu et al., 2013
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BEDROCK	EASTERN HIM/NBM	44.6	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.7	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	45.1	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	28.4	Xu et al., 2013

BEDROCK	EASTERN HIM/NBM	27.1	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	28.2	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.4	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.3	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.5	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.8	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	56.6	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	52.9	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	28.7	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	28.3	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.1	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	74.5	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	83.9	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	84.8	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.6	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	28.1	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	90	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	28.4	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	28.2	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	45.6	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	61	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	42.4	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	28.2	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	110	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	186	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	28.5	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.2	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	59.8	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	23.6	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	23.2	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	21.1	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	23.3	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	23.3	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	29.3	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	105	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	22.7	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	58	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	23.5	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	23.2	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.6	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	24.8	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	24.2	Xu et al., 2013

BEDROCK	EASTERN HIM/NBM	25.2	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	24.5	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	46.5	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	41	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	56.9	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	30	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	28	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	30.5	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	30	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	30.6	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	30	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	29.2	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	65	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	28.7	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	55.7	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	30.3	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	30.1	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	30.8	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	49.9	Xu et al., 2013
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BEDROCK	EASTERN HIM/NBM	46.4	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	29.8	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	30.4	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	30.3	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	58	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	29.1	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	51.6	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	30.4	Xu et al., 2013
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BEDROCK	EASTERN HIM/NBM	44.8	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	37.5	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.3	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.8	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.1	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.1	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.7	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.7	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.2	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.7	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.9	Xu et al., 2013

BEDROCK	EASTERN HIM/NBM	27.7	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.5	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.1	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	63	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.9	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.3	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.7	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.7	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.5	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.9	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.7	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.8	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.6	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.5	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	36.5	Xu et al., 2013
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BEDROCK	EASTERN HIM/NBM	26.5	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	25.9	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.1	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.7	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.4	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	30	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.2	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	29.2	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	46.8	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	27.4	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	25.4	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	26.1	Xu et al., 2013
BEDROCK	EASTERN HIM/NBM	20.8	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	22	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	22.3	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	22.4	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	22.5	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	22.5	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	22.6	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	22.7	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	22.7	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	23.1	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	23.2	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	23.2	Lin et al., 2013a

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BEDROCK	EASTERN HIM/NBM	23.8	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	23.9	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	24	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	24	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	24	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	24.1	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	24.3	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	24.8	Lin et al., 2013a
BEDROCK	EASTERN HIM/NBM	28.2	Lin et al., 2013a
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BEDROCK	EASTERN HIM/NBM	25.2	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	25	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	24	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	27	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	22	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	25.2	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	22	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	25	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	84	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	24	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	25	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	24	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	50.7	Guo et al., 2011
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BEDROCK	EASTERN HIM/NBM	25.3	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	23	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	24	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	26	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	23	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	25.9	Guo et al., 2011
BEDROCK	EASTERN HIM/NBM	24	Su et al., 2011
BEDROCK	EASTERN HIM/NBM	23	Su et al., 2011
BEDROCK	EASTERN HIM/NBM	24	Su et al., 2011
BEDROCK	EASTERN HIM/NBM	25	Su et al., 2011
BEDROCK	EASTERN HIM/NBM	25	Su et al., 2011
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BEDROCK	EASTERN HIM/NBM	26	Su et al., 2011
BEDROCK	EASTERN HIM/NBM	27	Su et al., 2011

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BEDROCK	EASTERN HIM/NBM	18	Su et al., 2011
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BEDROCK	EASTERN HIM/NBM	19	Su et al., 2011
BEDROCK	EASTERN HIM/NBM	19	Su et al., 2011
BEDROCK	EASTERN HIM/NBM	19	Su et al., 2011
BEDROCK	EASTERN HIM/NBM	19	Su et al., 2011
BEDROCK	EASTERN HIM/NBM	19	Su et al., 2011
BEDROCK	EASTERN HIM/NBM	21	Su et al., 2011
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BEDROCK	EASTERN HIM/NBM	10	Xu et al., 2010
BEDROCK	EASTERN HIM/NBM	10	Xu et al., 2010
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BEDROCK	EASTERN HIM/NBM	25	Xu et al., 2010
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BEDROCK	EASTERN HIM/NBM	5	Xu et al., 2010
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BEDROCK	EASTERN HIM/NBM	4	Xu et al., 2010
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BEDROCK	EASTERN HIM/NBM	30	Xu et al., 2010
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BEDROCK	EASTERN HIM/NBM	23	Xu et al., 2010
BEDROCK	EASTERN HIM/NBM	23	Xu et al., 2010

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BEDROCK	EASTERN HIM/NBM	24	Xu et al., 2010

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BEDROCK	EASTERN HIM/NBM	42	Ding et al., 2001
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BEDROCK	EASTERN HIM/NBM	21	Ding et al., 2001
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BEDROCK	EASTERN HIM/NBM	11	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	17	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	15	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	96	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	160	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	162	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	156	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	271	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	13	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	13	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	135	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	17	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	79	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	23	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	22	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	23	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	23	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	23	Ding et al., 2001
BEDROCK	EASTERN HIM/NBM	25.5	Zhang et al. 2010
BEDROCK	EASTERN HIM/NBM	25.6	Zhang et al. 2010
BEDROCK	EASTERN HIM/NBM	26.1	Zhang et al. 2010
BEDROCK	EASTERN HIM/NBM	25.2	Zhang et al. 2010
BEDROCK	EASTERN HIM/NBM	25.7	Zhang et al. 2010
BEDROCK	EASTERN HIM/NBM	25.5	Zhang et al. 2010
BEDROCK	EASTERN HIM/NBM	25.3	Zhang et al. 2010
BEDROCK	EASTERN HIM/NBM	24.7	Zhang et al. 2010
BEDROCK	EASTERN HIM/NBM	24.5	Zhang et al. 2010
BEDROCK	EASTERN HIM/NBM	25.6	Zhang et al. 2010
BEDROCK	EASTERN HIM/NBM	25.3	Zhang et al. 2010
BEDROCK	EASTERN HIM/NBM	30.6	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	29.1	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	30.6	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	31.5	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	29.5	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	31.6	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	31.4	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	31.9	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	31	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	31.1	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	29.4	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	28.7	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	29.8	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	31.4	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	30.6	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	30.6	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	30.1	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	32.3	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	30	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	20.8	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	41.2	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	29.7	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	14.8	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	15.5	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	14.1	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	15.2	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	15.3	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	14.9	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	14.9	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	15.3	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	15.5	Chung et al., 2009
BEDROCK	EASTERN HIM/NBM	23.8	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	27.3	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	27.5	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	28.8	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	33.9	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	34	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	34.6	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	35.2	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	35.6	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	35.7	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	35.8	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	36	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	36.3	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	36.6	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	37	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	38	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	38.2	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	38.3	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	38.8	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	39	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	39.3	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	16.3	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	20.9	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	23.2	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	23.3	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	24.3	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	24.8	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	25.9	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	26.1	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	26.9	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	27	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	28.2	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	29.1	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	29.5	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	30.7	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	30.8	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	31	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	31.1	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	31.2	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	31.7	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	31.8	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	32	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	32.7	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	32.9	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	33.1	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	33.2	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	33.2	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	33.4	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	35.3	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	35.6	Zhang et al., 2010b
BEDROCK	EASTERN HIM/NBM	205	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	210	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	231	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	236	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	245	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	195	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	236	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	240	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	246	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	249	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	268	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	272	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	249	Aikman et al., 2008

BEDROCK	EASTERN HIM/NBM	253	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	205	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	214	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	218	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	223	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	231	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	235	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	245	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	248	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	255	Aikman et al., 2008
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BEDROCK	EASTERN HIM/NBM	267	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	275	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	286	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	43.3	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	43.6	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	43.8	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	43.9	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.2	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.2	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.2	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.2	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	46.1	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	46.5	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	47.2	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	51.8	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	64.9	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	76.8	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	80.8	Aikman et al., 2008
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BEDROCK	EASTERN HIM/NBM	44	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	45	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	45.2	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	45.5	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	45.6	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	45.9	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	45.9	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	46.4	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	46.7	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	46.8	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	46.9	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	46.9	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	127.6	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	43.1	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.4	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.8	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	45.2	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	45.8	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	45.9	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	46.9	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	47.2	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	47.7	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	48.7	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	119.1	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	42.1	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.3	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.3	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.5	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.8	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	45.1	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	45.6	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	42.4	Aikman et al., 2008
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BEDROCK	EASTERN HIM/NBM	43.5	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	43.7	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.1	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.2	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.3	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.7	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	44.8	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	45.5	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	48.6	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	43.2	Aikman et al., 2008
BEDROCK	EASTERN HIM/NBM	33.7	Aikman et al., 2008
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BEDROCK	EASTERN HIM/NBM	147	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	159.7	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	143.2	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	149.5	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	144.2	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	137.5	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	137.7	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	150	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	144.4	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	148.1	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	149.5	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	146.1	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	145.1	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	123.1	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	136.8	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	139.2	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	118.5	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	132.6	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	164.1	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	138.1	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	141.8	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	149.2	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	142.5	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	124.3	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	131.1	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	149.2	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	226	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	158	Zhu et al., 2008
BEDROCK	EASTERN HIM/NBM	42.2	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	284	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	41.5	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	154.1	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	44.8	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	44.2	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	41	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	42.2	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	50.2	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	43.5	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	38	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	41.8	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	43.4	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	42.4	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	41.2	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	103.5	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	42.8	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	43.4	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	41.8	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	43.4	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	143.7	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	229	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	41.9	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	42.1	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	42.1	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	134.2	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	43.5	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	44.1	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	47.8	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	41.3	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	137.4	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	44.6	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	42.7	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	44.6	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	44.2	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	41	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	43.8	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	41	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	45.8	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	43.5	Zeng et al., 2011
BEDROCK	EASTERN HIM/NBM	44.7	Qi et al., 2008 in Zhang et al., 2012
BEDROCK	EASTERN HIM/NBM	44.6	Qi et al., 2008 in Zhang et al., 2012
BEDROCK	EASTERN HIM/NBM	44.4	Qi et al., 2008 in Zhang et al., 2012
BEDROCK	EASTERN HIM/NBM	44.2	Qi et al., 2008 in Zhang et al., 2012
BEDROCK	EASTERN HIM/NBM	44	Qi et al., 2008 in Zhang et al., 2012
BEDROCK	EASTERN HIM/NBM	43.5	Qi et al., 2008 in Zhang et al., 2012
BEDROCK	EASTERN HIM/NBM	224	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	264	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	231	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	265	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	229	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	239	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	258	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	260	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	235	Li et al., 2010

BEDROCK	EASTERN HIM/NBM	236	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	275	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	260	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	234	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	229	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	244	Li et al., 2010
BEDROCK	EASTERN HIM/NBM	51.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	48.8	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	44.3	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	43.5	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	43.4	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	55.8	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	48.9	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	44.8	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	44.5	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	44.7	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46.9	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45.2	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45.2	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	44.9	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46.2	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	47.2	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	48.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46.3	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45.6	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46.3	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	47.2	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	48	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46.5	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46.8	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45.8	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45.7	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	74.9	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	206.7	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	44.2	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	43.2	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45.6	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45.4	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45.6	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	47	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	78	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	189.7	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46.6	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	43.3	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46.4	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	44.9	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45.6	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46.5	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	50.4	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	48	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	44.4	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	47.4	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	47.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45.9	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	48.6	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	46	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	47.9	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	45.4	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	44.8	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	47.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	31.2	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.8	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.4	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.6	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.7	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.7	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.4	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.4	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.8	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.5	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.7	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.6	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.4	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.9	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.7	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.8	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.3	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.3	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.5	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.7	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.5	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.5	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.4	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	28.8	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.5	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	31.3	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.2	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	31.2	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	31.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.8	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	31.6	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.6	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	31.5	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.7	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	31.6	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.1	Hou et al., 2012
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BEDROCK	EASTERN HIM/NBM	28.6	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	31.8	Hou et al., 2012
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BEDROCK	EASTERN HIM/NBM	30	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.1	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	31.1	Hou et al., 2012
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BEDROCK	EASTERN HIM/NBM	29.8	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.9	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.7	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.3	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	29.5	Hou et al., 2012
BEDROCK	EASTERN HIM/NBM	30.6	Hou et al., 2012
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BEDROCK	EASTERN HIM/NBM	279.5	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	33.7	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	41.8	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	63.2	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	225.2	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	233.7	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	19.3	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	19.4	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	20.3	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	20.6	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	21	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	46.5	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	47.1	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	42	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	42.6	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	26.8	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	36.4	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	42.1	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	42.2	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	49.4	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	50.8	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	21.9	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	22.9	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	23.4	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	23.4	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	25.2	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	20.5	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	20.6	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	20.6	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	20.7	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	23.3	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	23.5	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	20.4	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	20.4	Aikman et al., 2012
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BEDROCK	EASTERN HIM/NBM	21	Aikman et al., 2012

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BEDROCK	EASTERN HIM/NBM	20.5	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	20.6	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	20.7	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	20.7	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	20.8	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	20.8	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	20.9	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	21	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	21.2	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	21.6	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	21.6	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	21.8	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	21.9	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	22.4	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	23.8	Aikman et al., 2012
BEDROCK	EASTERN HIM/NBM	220	Webb et al., 2012
BEDROCK	EASTERN HIM/NBM	223	Webb et al., 2012
BEDROCK	EASTERN HIM/NBM	243	Webb et al., 2012
BEDROCK	EASTERN HIM/NBM	251	Webb et al., 2012
BEDROCK	EASTERN HIM/NBM	252	Webb et al., 2012
BEDROCK	EASTERN HIM/NBM	253	Webb et al., 2012
BEDROCK	EASTERN HIM/NBM	275	Webb et al., 2012
BEDROCK	EASTERN HIM/NBM	278	Webb et al., 2012
BEDROCK	EASTERN HIM/NBM	199	Webb et al., 2012

2.10.3 Compilation of detrital geochronology

TABLE A3. COMPILED DETRTIAL U/PB AGES

TYPE	LETTER IN FIGURE 1	LOCATION	PREFERRED AGE (Ma)	± 1 sigma (Ma)	SOURCE
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	596.1	16.9	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	359.9	8.11	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	21.3	1	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	390.0	53.34	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	199.1	28.67	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	9.5	0.88	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	16.1	0.48	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	650.4	12.15	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	505.0	11.4	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	29.4	1.04	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	491.2	27.2	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	25.8	6.48	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	1790.4	7.52	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	1369.6	7.95	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	546.2	20.04	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	495.0	55.67	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	18.9	1.25	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	30.5	4.92	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	1507.3	20.22	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	814.1	16.4	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	17.6	2.07	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	484.6	18.12	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	486.1	12.76	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	778.5	12.69	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	930.9	14.41	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	392.8	19.82	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	500.8	14.59	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	9.7	0.47	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	1230.9	5.94	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	767.8	42.31	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	802.8	10.42	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	378.1	10.88	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	504.7	15.93	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	466.5	12.46	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	756.6	22.95	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	477.6	8.14	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	473.4	5.84	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	25.8	1.25	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	465.4	13.33	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	91.9	2.3	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	235.1	68.72	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	828.6	33.02	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	653.5	38.64	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	419.1	17.4	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	71.4	3.81	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	961.4	19.86	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	667.2	52.58	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	198.1	25.81	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	382.7	20.76	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	1265.2	9.15	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	478.6	15.51	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	514.3	14.77	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	1430.8	20.67	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	594.6	24.44	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	748.3	30.69	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	5.8	2.49	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	459.2	15.84	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	745.9	17.09	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	1702.6	9.26	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	437.1	17.22	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	482.0	7.01	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	383.6	12.73	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	584.0	30.87	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	16.7	1.3	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	360.1	10.91	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	1207.2	10.45	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	345.9	19.2	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	25.3	0.92	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	520.9	11.07	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	218.6	10.36	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	800.4	11.56	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	1607.2	25.97	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	25.2	1.35	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	1484.7	61.7	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	673.5	20.46	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	485.3	10.07	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	477.6	13.36	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	20.8	0.55	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	482.7	20.86	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	456.9	19.12	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	938.3	19.38	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	1322.5	9.58	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	184.6	10.39	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	516.1	13.7	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	429.5	15.91	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	623.8	29.59	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	142.1	5.69	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	19.4	0.28	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	399.4	12.48	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	497.3	21.27	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	502.2	20.48	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	6.0	0.48	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	437.4	17.86	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	504.4	10.01	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	565.2	39.1	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	792.6	8.83	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	450.2	10.66	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	26.9	0.45	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	26.2	1.68	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	784.0	28.16	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	397.0	21.47	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	465.4	20.36	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	22.6	0.49	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	751.8	65.99	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	755.0	30.71	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	484.5	9.72	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	785.7	49.34	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	147.1	11.55	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	769.4	17.16	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	279.8	49.33	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	507.3	20.99	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	761.5	23.47	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	24.6	0.67	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	21.6	0.98	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	24.3	3.76	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	32.5	10.02	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	496.0	34.69	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	8.5	0.74	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	719.4	14.27	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	558.4	58.87	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	490.7	10.48	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	198.1	15.93	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	824.7	27.55	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	476.0	19.48	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	16.2	0.42	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	66.1	2.72	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	533.5	27.16	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	425.7	8.56	Lang et al., 2013
MODERN ALLUVIUM	M	NAMCHE BARWA TRIBUTARY	486.6	18.6	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	106.5	2.26	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	72.1	5.68	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	112.1	1.67	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	51.5	1.83	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	1712.4	22.78	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	933.2	48.71	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	119.1	5.85	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	70.9	4.24	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	72.7	2.55	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	44.3	2.44	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	111.5	1.18	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	53.6	1.18	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	74.6	3.38	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	104.7	2.44	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	68.8	2.82	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	70.1	1.81	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	108.5	4.06	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	115.2	3.91	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	113.7	3.31	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	107.8	3.21	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	118.0	2.62	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	105.7	2.72	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	113.8	2.05	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	106.6	4.19	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	377.7	54.16	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	115.4	2.77	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	105.3	11.31	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	116.3	3.83	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	108.9	1.11	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	74.4	2.06	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	124.1	3.53	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	501.4	21.49	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	213.0	8.85	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	500.4	9.57	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	779.9	41.75	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	112.4	3.09	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	110.9	3.72	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	73.9	2.14	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	60.9	7.83	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	1494.5	47.8	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	76.1	3.12	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	115.0	4.49	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	524.2	73.78	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	105.3	2.62	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	74.4	1.99	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	111.3	2.99	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	73.1	3.02	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	115.4	4.08	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	75.6	3.14	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	73.1	2.11	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	72.7	8.9	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	106.5	2.59	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	1387.4	11.25	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	113.5	3.5	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	120.2	10.46	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	2273.6	11.61	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	73.6	1.43	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	112.3	8.07	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	121.2	4.42	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	1538.8	23.53	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	146.8	15.59	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	52.1	1.62	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	72.9	3.38	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	110.9	2.6	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	108.2	2.84	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	108.4	4.17	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	70.0	2.14	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	62.0	2.29	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	123.3	2.51	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	115.0	2.1	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	784.0	25.52	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	118.1	2.47	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	114.2	3.32	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	114.9	1.82	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	124.3	6.46	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	206.8	4.67	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	110.1	2.34	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	123.7	5.4	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	1905.9	19.84	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	2789.9	11.22	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	77.9	18.61	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	111.1	3.93	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	108.8	3.03	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	121.2	23.05	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	1554.3	17.01	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	107.4	5.1	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	113.2	2.08	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	75.7	3.49	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	70.5	2.89	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	61.4	1.26	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	109.9	2.01	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	73.4	2.21	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	105.6	7.98	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	111.1	2.56	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	102.6	4.09	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	569.6	20.3	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	821.8	13.36	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	111.5	2.72	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	505.3	20.16	Lang et al., 2013

MODERN ALLUVIUM	I	YIGONG RIVER	76.1	4.81	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	115.9	1.83	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	1625.5	2.71	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	2463.2	13.06	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	220.8	2.23	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	934.6	25.64	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	863.5	55.8	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	74.5	2.85	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	212.2	4.29	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	119.8	4.41	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	113.7	3.74	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	106.5	2.43	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	124.6	3.83	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	121.4	7.95	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	109.8	1.97	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	116.2	3.75	Lang et al., 2013
MODERN ALLUVIUM	I	YIGONG RIVER	134.7	14.39	Lang et al., 2013
MODERN ALLUVIUM	L	LOHIT RIVER	4.8	0.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	25.3	0.4	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	28.3	0.4	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	50.5	0.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	52.5	0.8	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	69.3	1.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	69.3	1.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	70.3	1.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	72.3	1.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	83.1	1.5	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	84.8	1.5	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	85.3	1.2	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	86.4	1.3	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	86.6	1.2	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	87.7	1.2	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	88.1	1.2	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	89.9	1.3	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	91.6	1.4	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	101.5	1.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	101.8	1.6	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	104.7	1.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	105.5	1.5	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	105.6	6.5	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	107.2	1.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	107.6	1.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	107.8	1.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	108.5	1.5	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	110.1	1.6	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	110.1	1.6	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	111.0	1.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	111.8	1.8	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	114.1	2	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	116.2	1.9	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	116.3	1.8	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	116.3	2	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	118.2	2	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	120.0	1.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	121.4	1.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	122.2	1.8	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	122.4	2.5	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	123.1	8.5	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	125.4	1.6	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	127.9	1.6	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	128.5	1.9	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	131.7	1.9	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	133.8	1.8	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	134.4	1.8	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	144.2	1.9	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	145.3	1.9	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	149.8	2.2	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	180.2	2.5	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	203.3	2.6	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	214.5	2.8	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	897.3	11.3	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1061.9	20.4	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1074.8	30.4	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1126.9	18.8	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1144.8	24	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1148.5	20.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1172.2	23	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1191.2	21	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1193.0	21.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1214.9	21.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1220.4	22.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1233.3	18	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1235.4	25	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1304.1	18.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1385.6	23.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1449.3	19.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1494.4	19.2	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1708.2	17.8	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1739.6	18.9	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1929.7	103	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1930.6	70.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1945.7	111	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1962.4	750	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1971.6	64.4	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	1999.6	104	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2016.2	106	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2019.2	517	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2038.2	129	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2046.5	140	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2047.9	136	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2058.7	122	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2059.2	97	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2059.4	210	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2095.5	125	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2103.7	161	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2104.3	132	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2131.5	128	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2174.3	154	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2229.7	107	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2236.6	170	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2237.5	117	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2263.9	126	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2270.5	77.8	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2297.2	94.5	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2334.3	102	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2335.0	122	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2340.3	120	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2341.2	45.8	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2380.6	114	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2394.5	227	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2404.5	143	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2409.1	77.6	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2409.4	119	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2440.1	41.5	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2462.7	121	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2479.0	101	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2494.3	96.6	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2505.9	73.9	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2515.2	96.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2535.3	77.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2540.3	76.6	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2582.4	126	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2609.1	97.6	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2611.0	152	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2618.3	51.2	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2665.3	109	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2795.4	16.9	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2807.3	120	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2819.5	78.4	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2847.5	109	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2866.1	119	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2867.5	87.8	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2921.2	72.1	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2925.6	44.4	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2963.1	215	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	2978.3	115	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	3019.7	38.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	3064.7	150	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	3066.8	64.2	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	3097.2	24.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	3130.1	62.7	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	3164.4	51.5	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	3177.1	28.5	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	3271.7	52.9	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	3469.9	111	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	3646.9	39.9	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	3738.6	67.2	Cina et al., 2009
MODERN ALLUVIUM	L	LOHIT RIVER	3835.2	33.6	Cina et al., 2009
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	12.4	0.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	16.5	0.2	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	21.6	0.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	24.7	0.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	33.1	0.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	34.9	0.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	35.0	0.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	35.8	0.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	39.7	0.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	39.9	0.7	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	40.7	0.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	40.7	1.2	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	41.2	0.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	41.7	1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	42.3	0.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	42.4	1.2	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	42.7	0.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	42.8	0.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	42.9	0.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	43.6	2.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	43.6	1.2	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	43.6	1.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	44.1	1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	44.1	0.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	44.8	0.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	44.9	0.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	46.3	1.2	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	46.3	0.7	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	47.0	1.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	47.3	2.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	47.5	1.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	47.5	0.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	47.5	3.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	48.1	1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	50.0	2.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	50.1	1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	50.8	1.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	50.8	1.7	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	50.8	1.7	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	50.9	0.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	51.0	3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	51.5	1.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	52.2	1.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	52.3	1.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	52.7	3.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	53.2	6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	53.3	1.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	54.3	0.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	55.2	0.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	56.3	1.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	57.4	3.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	58.3	0.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	58.9	1.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	59.0	6.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	59.3	1.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	59.5	3.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	60.0	3.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	60.9	5.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	62.3	1.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	62.9	0.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	64.1	1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	67.2	4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	68.2	1.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	70.5	2.2	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	75.7	2.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	77.6	3.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	78.3	1.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	81.4	4.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	81.5	0.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	86.9	1.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	92.4	2	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	102.9	1.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	108.0	8.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	112.0	1.2	Stewart et al., 2008

MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	117.8	1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	120.2	1.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	121.6	1.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	121.7	3.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	129.9	1.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	136.8	4.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	141.5	4.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	144.7	1.2	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	167.9	8.7	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	180.1	6.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	182.0	1.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	187.5	1.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	193.8	4.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	199.2	11.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	206.4	2.7	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	227.8	1.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	302.7	5.2	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	397.8	1.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	438.6	3.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	439.3	2.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	442.6	3.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	444.8	2.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	456.1	3.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	457.6	3.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	461.9	3.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	465.9	3.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	471.5	2.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	493.4	3.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	493.8	3.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	496.2	1.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	507.9	2.7	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	516.0	6.7	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	546.0	2.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	549.7	7.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	567.5	5.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	569.3	4.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	575.7	5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	579.4	3.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	583.5	37.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	628.7	9.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	630.4	5.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	684.6	18.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	686.5	2.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	703.9	2.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	713.5	4.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	725.5	6.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	838.1	5.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	909.6	4.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	911.8	5.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	931.7	4.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	936.2	9.2	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	961.4	5.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	979.1	4.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	983.6	4.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	999.9	13.7	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1018.0	15	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1020.7	7	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1035.0	4.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1043.2	5.9	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1055.9	3.7	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1061.5	7.2	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1097.6	3.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1144.7	5.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1152.4	9.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1176.9	8.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1185.7	4.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1215.4	7.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1244.4	9.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1262.1	5.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1264.7	12.2	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1307.9	8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1321.5	3.7	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1477.1	8.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1576.4	6.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1592.2	8.4	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1621.1	12.5	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1626.2	19.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1627.5	7.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1672.6	3.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1710.8	6.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1755.4	4.7	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	1842.0	9.6	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	2231.5	2.2	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	2373.0	8.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	2399.5	39.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	2433.6	9.8	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	2698.5	2.3	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	2829.4	5.1	Stewart et al., 2008
MODERN ALLUVIUM	Y	YARLUNG RIVER (PAI)	2842.9	3.5	Stewart et al., 2008
MODERN ALLUVIUM	X	LANGXIAN RIVER	30.5	0.7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	53.0	1	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	64.0	5	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	74.0	3	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	82.0	5	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	83.0	5	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	86.0	2	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	86.0	3	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	87.0	2	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	89.0	3	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	90.0	3	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	91.0	2	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	92.0	2	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	94.0	3	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	96.0	6	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	97.0	3	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	99.0	5	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	101.0	3	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	101.0	2	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	109.0	4	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	110.0	3	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	110.0	5	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	117.0	4	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	118.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	126.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	127.0	3	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	139.0	4	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	140.0	3	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	178.0	3	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	181.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	192.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	194.0	9	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	198.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	235.0	6	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	251.0	5	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	279.0	5	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	281.0	6	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	287.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	292.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	294.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	299.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	302.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	302.0	6	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	302.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	310.0	10	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	310.0	6	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	313.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	316.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	317.0	6	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	323.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	323.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	332.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	334.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	334.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	336.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	337.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	341.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	342.0	10	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	343.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	344.0	10	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	346.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	348.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	351.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	351.0	9	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	352.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	357.0	7	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	359.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	359.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	360.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	362.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	363.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	363.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	364.0	9	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	364.0	9	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	367.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	369.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	369.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	375.0	9	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	378.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	381.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	385.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	389.0	8	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	554.0	11	Zhang et al., 2012
MODERN ALLUVIUM	X	LANGXIAN RIVER	738.0	16	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	23.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	43.0	1	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	50.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	51.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	53.0	1	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	56.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	57.0	1	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	59.0	1	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	59.0	1	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	60.0	1	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	61.0	1	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	62.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	62.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	63.0	4	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	64.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	65.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	65.0	3	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	65.0	4	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	66.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	67.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	67.0	3	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	68.0	3	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	73.0	3	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	77.0	3	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	81.0	3	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	83.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	84.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	89.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	89.0	3	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	95.0	2	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	98.0	3	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	100.0	3	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	111.0	3	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	113.0	4	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	134.0	4	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	145.0	5	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	147.0	3	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	148.0	4	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	149.0	3	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	200.0	4	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	200.0	4	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	282.0	6	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	395.0	10	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	437.0	9	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	448.0	10	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	505.0	12	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	583.0	12	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	744.0	16	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	757.0	16	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	762.0	15	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	810.0	17	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	815.0	17	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	826.0	19	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	827.0	17	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	904.0	19	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	925.0	20	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	961.0	21	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	993.0	21	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	994.0	20	Zhang et al., 2012

MODERN ALLUVIUM	Q	LAYUE QU RIVER	1000.0	21	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1072.0	26	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1076.0	142	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1120.0	26	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1144.0	27	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1195.0	29	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1213.0	24	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1219.0	134	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1222.0	26	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1225.0	27	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1251.0	26	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1292.0	85	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1325.0	24	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1344.0	26	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1372.0	27	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1378.0	117	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1434.0	28	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1435.0	26	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1464.0	26	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1486.0	23	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1515.0	26	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1524.0	25	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1538.0	25	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1573.0	25	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1600.0	115	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1834.0	36	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1843.0	35	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	1884.0	25	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	2562.0	55	Zhang et al., 2012
MODERN ALLUVIUM	Q	LAYUE QU RIVER	2723.0	23	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	35.8	0.9	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	47.0	2	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	47.0	1	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	48.0	3	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	48.0	2	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	49.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	67.0	3	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	83.0	3	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	195.0	5	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	195.0	6	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	203.0	7	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	206.0	5	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	211.0	4	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	232.0	9	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	243.0	6	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	309.0	13	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	343.0	7	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	345.0	7	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	378.0	7	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	388.0	8	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	521.0	12	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	525.0	10	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	559.0	14	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	570.0	11	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	573.0	14	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	602.0	12	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	613.0	15	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	617.0	22	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	620.0	15	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	623.0	14	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	626.0	13	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	626.0	13	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	650.0	14	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	655.0	14	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	655.0	12	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	660.0	18	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	687.0	13	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	724.0	15	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	736.0	15	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	763.0	22	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	788.0	17	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	817.0	17	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	829.0	17	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	843.0	18	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	898.0	22	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	921.0	20	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	931.0	20	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	950.0	18	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	955.0	20	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	959.0	18	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	991.0	90	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	995.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1020.0	20	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1020.0	21	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1072.0	20	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1116.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1121.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1166.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1186.0	20	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1195.0	22	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1219.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1233.0	20	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1260.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1265.0	20	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1266.0	116	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1318.0	21	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1325.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1326.0	38	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1340.0	45	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1452.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1464.0	93	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1487.0	100	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1522.0	18	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1523.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1539.0	21	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1562.0	18	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1576.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1649.0	27	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1670.0	93	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1694.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1752.0	49	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1770.0	20	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1814.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	1878.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	2139.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	2302.0	20	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	2364.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	2519.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	2647.0	19	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	2672.0	43	Zhang et al., 2012
MODERN ALLUVIUM	N	NYINGOH RIVER	2856.0	19	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	61.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	68.0	2	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	71.0	2	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	71.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	72.0	2	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	75.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	75.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	77.0	2	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	78.0	2	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	92.0	2	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	99.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	100.0	2	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	101.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	103.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	104.0	2	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	105.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	106.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	108.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	108.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	109.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	109.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	109.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	109.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	110.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	111.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	111.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	111.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	112.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	113.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	113.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	113.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	113.0	2	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	114.0	6	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	114.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	115.0	6	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	115.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	115.0	6	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	116.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	116.0	2	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	116.0	6	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	117.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	117.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	117.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	118.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	118.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	118.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	118.0	2	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	119.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	120.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	120.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	121.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	121.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	121.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	122.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	123.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	123.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	124.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	125.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	125.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	126.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	126.0	6	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	127.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	128.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	128.0	7	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	129.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	130.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	131.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	132.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	133.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	134.0	5	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	134.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	136.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	138.0	3	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	142.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	146.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	196.0	4	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	323.0	6	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	445.0	8	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	472.0	14	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	507.0	10	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	508.0	12	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	513.0	12	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	535.0	13	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	554.0	10	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	562.0	13	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	573.0	11	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	599.0	11	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	601.0	19	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	631.0	13	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	889.0	16	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	1186.0	19	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	1268.0	19	Zhang et al., 2012
MODERN ALLUVIUM	P	PARLUNG RIVER	1675.0	18	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	18.3	0.5	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	27.3	0.8	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	27.4	0.7	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	30.4	0.6	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	36.6	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	41.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	43.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	44.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	46.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	47.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	47.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	48.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	48.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	48.0	3	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	49.0	2	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	49.0	2	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	49.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	49.0	1	Zhang et al., 2012

MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	50.0	2	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	50.0	2	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	50.0	2	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	51.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	51.0	2	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	51.0	2	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	53.0	2	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	54.0	2	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	57.0	2	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	57.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	59.0	2	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	62.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	63.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	66.0	1	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	87.0	2	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	88.0	3	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	90.0	4	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	95.0	3	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	96.0	3	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	108.0	3	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	112.0	3	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	127.0	2	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	129.0	3	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	166.0	7	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	175.0	5	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	199.0	4	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	334.0	6	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	450.0	8	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	497.0	10	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	505.0	9	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	508.0	10	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	540.0	10	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	584.0	11	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	586.0	11	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	590.0	12	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	602.0	11	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	647.0	13	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	699.0	19	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	782.0	19	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	838.0	17	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	856.0	16	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	862.0	17	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	874.0	15	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	882.0	16	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	981.0	20	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	1016.0	20	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	1035.0	19	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	1062.0	88	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	1062.0	17	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	1109.0	73	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	1285.0	22	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	1429.0	19	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	1560.0	18	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	1617.0	17	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	1639.0	19	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	1670.0	17	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	1798.0	21	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	2350.0	19	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	2655.0	19	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	2999.0	18	Zhang et al., 2012
MODERN ALLUVIUM	G	YARLUNG RIVER (GYACA)	3420.0	18	Zhang et al., 2012
MODERN ALLUVIUM	K	KAMENG RIVER	22.6	0.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	204.7	4.2	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	441.2	12.8	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	449.7	6.7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	469.2	13.8	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	470.5	35.3	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	474.3	16.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	477.3	10.3	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	479.0	6.7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	480.6	15.2	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	481.6	5	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	482.5	4.6	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	484.6	28.6	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	488.6	4.7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	489.9	6.6	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	490.7	9.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	493.8	12.8	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	495.2	11.5	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	496.3	9.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	497.2	7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	498.0	4.8	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	498.7	7.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	503.8	14.5	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	504.9	9.6	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	508.6	7.8	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	510.2	10.5	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	513.0	9.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	513.4	15.6	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	516.9	7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	520.4	5	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	520.6	7.8	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	521.8	7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	527.6	7.3	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	532.5	10.7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	536.5	22	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	540.3	12.6	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	558.2	5.3	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	559.5	48.1	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	562.4	7.2	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	570.1	18.7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	600.3	50	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	634.5	6	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	740.8	28.1	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	751.9	10.4	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	770.2	20.1	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	775.9	8.8	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	777.2	32.6	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	798.1	11.3	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	799.5	7.5	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	800.3	65.5	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	800.3	10.3	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	802.9	12.5	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	805.7	13.5	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	807.5	8.6	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	812.9	56	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	813.2	12.8	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	824.7	7.7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	826.5	11.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	833.2	24.5	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	833.9	36.1	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	838.2	7.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	842.6	13.8	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	852.7	46.8	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	856.1	16.7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	856.2	10.1	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	862.0	14	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	862.3	9.1	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	864.9	23.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	899.7	10.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	936.8	8.7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	947.3	13.2	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	954.7	12.6	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	956.2	14.8	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1012.0	23.7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1030.6	47.3	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1039.1	20.2	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1076.9	25.5	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1094.6	20	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1101.4	27.4	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1129.3	56.3	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1149.5	19.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1154.0	19.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1170.3	26.2	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1170.9	19.8	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1174.0	19.8	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1268.0	88.1	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1277.0	62.2	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1438.6	19.1	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1483.8	18.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1606.1	18.7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1631.2	18.6	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1652.9	18.6	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1818.9	18.2	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1846.7	18.1	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	1853.3	18.1	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	2153.4	18	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	2451.9	16.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	2466.7	16.9	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	2563.2	16.7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	2595.1	16.7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	3030.0	16.4	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	3259.6	15.7	Cina et al., 2009
MODERN ALLUVIUM	K	KAMENG RIVER	3422.8	15.6	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	22.8	0.2	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	43.0	0.2	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	44.2	1.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	201.3	4.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	257.1	5.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	318.9	6.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	385.4	5.3	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	394.7	7.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	398.5	7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	417.1	10	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	426.4	16.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	441.0	9.2	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	452.8	8.2	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	456.0	17.1	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	458.7	5.2	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	460.4	15.1	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	463.1	14.3	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	463.5	4.3	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	465.2	14.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	467.3	5.4	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	469.0	12.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	472.5	10.6	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	473.2	11.1	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	473.9	10.1	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	476.0	3.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	477.0	3.6	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	477.8	12.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	478.4	4.9	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	479.7	8.4	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	480.4	6.3	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	482.7	3.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	483.6	4.6	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	484.3	6.2	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	484.6	4.3	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	486.1	7.3	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	490.3	2.4	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	490.6	5.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	491.4	11.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	492.7	4.4	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	494.0	7.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	498.0	3.4	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	498.1	5.1	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	498.4	4.9	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	498.9	9.1	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	499.3	3.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	499.8	8.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	500.5	10.9	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	500.9	3.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	501.1	3.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	501.1	4.2	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	501.3	5.6	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	503.0	4.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	505.6	2.4	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	508.7	9.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	509.7	2.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	510.5	7.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	511.5	3.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	511.7	5.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	512.8	2.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	513.1	2.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	514.0	3.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	515.5	4.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	516.3	2.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	517.6	2.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	519.1	2.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	527.8	16.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	537.9	4.9	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	575.4	57	Cina et al., 2009

MODERN ALLUVIUM	U	SUBANSIRI RIVER	580.7	5.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	669.4	29.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	673.8	11.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	717.5	16.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	732.9	28.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	734.6	29.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	739.5	3.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	760.8	19.4	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	762.8	21.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	766.5	8.2	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	767.5	14.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	770.5	11.3	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	774.9	4.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	775.4	14.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	787.2	6.4	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	787.7	7.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	793.6	6.6	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	798.4	7.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	800.9	8.7	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	808.5	3.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	813.9	14	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	815.2	9.9	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	817.1	3.8	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	819.4	7.3	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	823.0	8.5	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	840.4	26.6	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	899.1	13.1	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	976.4	64.3	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	1023.7	59.3	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	1158.1	32.4	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	1163.0	57.3	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	1172.8	89.4	Cina et al., 2009
MODERN ALLUVIUM	U	SUBANSIRI RIVER	1384.0	69.6	Cina et al., 2009
MODERN ALLUVIUM	A	SIQUNAMA RIVER	161.0	2	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	231.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	232.0	2	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	239.0	4	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	246.0	3	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	247.0	7	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	248.0	3	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	263.0	3	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	377.0	3	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	402.0	6	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	408.0	4	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	418.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	429.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	448.0	10	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	459.0	6	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	475.0	4	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	491.0	7	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	492.0	4	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	497.0	4	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	498.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	498.0	8	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	500.0	10	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	504.0	4	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	508.0	4	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	511.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	511.0	7	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	517.0	4	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	519.0	6	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	521.0	6	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	521.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	524.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	540.0	9	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	548.0	7	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	549.0	8	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	554.0	6	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	560.0	6	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	565.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	569.0	6	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	571.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	578.0	6	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	581.0	9	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	582.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	583.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	587.0	8	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	591.0	8	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	593.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	596.0	7	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	601.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	602.0	7	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	605.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	608.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	608.0	9	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	609.0	6	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	612.0	12	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	614.0	7	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	627.0	6	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	648.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	660.0	5	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	685.0	8	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	690.0	7	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	788.0	7	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	819.0	9	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	827.0	8	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	887.0	7	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	894.0	8	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	900.0	12	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	907.0	7	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	951.0	7	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	955.0	9	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	956.0	12	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	958.0	7	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	970.0	10	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	980.0	8	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	983.0	8	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1032.0	42	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1059.0	102	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1071.0	14	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1074.0	9	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1080.0	32	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1088.0	19	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1090.0	14	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1104.0	127	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1119.0	49	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1119.0	18	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1170.0	89	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1170.0	62	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1184.0	24	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1190.0	12	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1276.0	85	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1284.0	65	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1314.0	31	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1362.0	21	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1517.0	10	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1572.0	21	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1676.0	8	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1727.0	16	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1757.0	16	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1782.0	11	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1872.0	19	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	1947.0	17	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	2168.0	32	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	2427.0	20	Zhang et al., 2012
MODERN ALLUVIUM	A	SIQUNAMA RIVER	2869.0	6	Zhang et al., 2012
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	125.3	5.2	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	130.8	5.9	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	324.7	13.9	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	479.7	10.9	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	489.8	7.2	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	491.5	4.7	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	493.2	4.9	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	496.2	4.8	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	498.8	4.8	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	500.3	4.8	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	501.1	7	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	503.4	5.5	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	506.7	16.5	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	508.1	7.4	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	509.5	5.2	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	510.5	17.5	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	510.6	7.6	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	514.5	10.2	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	517.1	8.4	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	518.6	12.8	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	531.7	25.8	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	540.9	8.9	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	541.7	11.7	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	617.6	19.6	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	708.5	7	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	740.2	43.8	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	757.5	25.3	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	776.2	12.6	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	787.3	22.6	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	787.7	14.9	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	790.5	15.5	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	798.0	10.9	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	801.2	23.8	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	803.1	9.9	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	805.0	14.9	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	809.6	20.2	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	812.3	45.1	Cina et al., 2009
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LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	822.1	20.4	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	826.0	8.4	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	826.6	13.7	Cina et al., 2009
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LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	846.8	10.5	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	850.8	35.2	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	853.2	9.5	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	865.0	12.1	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	867.9	13.5	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	881.4	15	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	908.1	35.9	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	911.4	10.1	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	922.3	29.4	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	927.3	11.4	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	933.7	23.3	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	948.2	18.6	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1027.0	27.8	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1055.0	19.8	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1061.4	15.4	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1073.8	10.4	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1074.5	20.7	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1077.0	44.9	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1084.6	10	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1102.4	27.6	Cina et al., 2009
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LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1110.2	18.1	Cina et al., 2009
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LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1631.8	20.8	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1650.6	17.5	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1689.5	17.2	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1754.4	35	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1777.2	52.3	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1778.7	32.6	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1792.6	17.4	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1801.9	63.4	Cina et al., 2009
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LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1857.9	34.7	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1874.5	25.4	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1878.4	26.6	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1890.3	70.5	Cina et al., 2009
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LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	2036.7	41	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	2370.8	30	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	2432.8	34.4	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	2470.1	38	Cina et al., 2009
LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	2555.1	21.1	Cina et al., 2009

LOWER SIWALIK	BHALUKPONG SECTION	BHALUKPONG	2982.0	32.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	6.9	0.1	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	24.1	1.4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	24.9	0.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	30.0	0.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	34.4	2.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	36.2	1.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	37.0	3.1	Cina et al., 2009
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MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	41.0	3.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	41.7	1.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	42.3	0.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	43.6	3.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	44.5	0.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	45.4	1.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	47.9	0.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	48.3	1	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	48.9	4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	49.0	0.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	49.2	0.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	50.6	0.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	50.8	1.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	52.5	3.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	53.8	2.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	54.1	0.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	60.6	1.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	61.2	1.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	63.9	2.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	65.1	0.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	71.6	3.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	73.3	1.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	78.6	4.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	81.6	1.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	84.5	5.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	86.1	3.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	99.4	2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	101.4	4.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	139.6	2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	150.2	13	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	189.2	13.1	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	262.6	5.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	311.1	3.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	362.8	17.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	379.2	37.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	421.8	31.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	448.5	20.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	448.7	15.1	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	449.8	13.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	457.3	21	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	459.9	9.1	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	462.1	7.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	464.0	7.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	464.2	8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	470.3	13.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	470.4	28.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	470.4	6.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	470.7	9.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	471.9	14.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	474.3	21.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	481.0	6.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	481.1	4.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	482.1	11.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	484.7	21.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	486.9	12.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	488.0	7.1	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	488.5	4.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	490.6	22.4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	490.8	9.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	494.9	8.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	499.9	11.4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	501.5	20.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	502.8	5.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	511.0	18.4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	513.6	5.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	520.5	6.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	522.5	9.1	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	524.4	12.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	551.6	7.1	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	794.8	11.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	802.7	19	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	811.3	36.4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	815.3	9.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	833.7	18.4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	841.3	26.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1010.7	49.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1014.4	45	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1092.7	69.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1107.8	78	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1145.3	89.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1179.4	69.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1213.4	31.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1216.8	70.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1265.9	26.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1326.0	58.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1548.7	23.1	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1553.2	50.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1571.5	35.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1576.3	51.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1604.1	73.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1608.9	67.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1619.7	48	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1661.7	48	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1664.0	42.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1678.3	39.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1689.2	74.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1715.3	48.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1782.4	39.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	1897.8	42.4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	3060.8	46.1	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	16.5	0.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	17.8	0.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	18.5	1.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	20.7	0.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	22.0	0.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	27.1	0.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	32.4	1.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	33.2	1.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	43.4	2.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	43.6	1.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	51.9	0.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	52.7	1.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	54.0	0.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	58.1	4.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	64.2	3.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	64.4	1.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	65.1	0.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	67.7	3.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	68.7	1	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	79.3	4.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	88.9	0.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	92.1	4.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	127.9	2.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	150.9	8.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	217.9	2.1	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	219.6	8.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	276.2	27.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	287.4	20	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	200.1	15.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	208.0	12.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	216.0	13.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	224.0	22.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	232.0	5.4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	239.9	36.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	247.9	15.1	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	255.9	6.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	263.9	4.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	271.9	7.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	279.8	4.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	287.8	5.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	295.8	7.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	303.8	11	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	311.8	4.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	319.7	11.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	327.7	7.4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	335.7	12.4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	343.7	6.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	351.6	7.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	359.6	4.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	367.6	4.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	375.6	4.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	383.6	4.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	391.5	11.4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	399.5	8.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	407.5	7.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	415.5	13.4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	423.5	6.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	431.4	4.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	439.4	11.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	447.4	6.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	455.4	11.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	463.3	8.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	471.3	15.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	479.3	6.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	487.3	13.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	495.3	5.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	503.2	18.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	511.2	10.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	519.2	8.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	527.2	7.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	535.2	13.6	Cina et al., 2009
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MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	551.1	11.2	Cina et al., 2009
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MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	567.1	24.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	575.0	11.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	583.0	68.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	591.0	74	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	599.0	38.8	Cina et al., 2009
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MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	614.9	57.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	622.9	37.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	630.9	41.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	638.9	42.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	646.9	82.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	654.8	50.4	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	662.8	58.6	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	670.8	118	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	678.8	75.9	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	686.7	48.3	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	694.7	84.2	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	702.7	48.7	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	710.7	41.8	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	718.7	53.5	Cina et al., 2009
MIDDLE SIWALIK	BHALUKPONG SECTION	BHALUKPONG	726.6	33.1	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	19.4	0.3	Cina et al., 2009
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LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	25.8	0.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	29.4	0.4	Cina et al., 2009
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LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	279.3	4.9	Cina et al., 2009
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LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	432.9	5.5	Cina et al., 2009
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LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	447.9	6.4	Cina et al., 2009
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LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	482.7	6.1	Cina et al., 2009
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LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	492.0	6.3	Cina et al., 2009
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LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1007.3	12.4	Cina et al., 2009
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LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1038.1	20.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1040.8	19	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1062.2	19.6	Cina et al., 2009
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LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1695.4	17.9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1700.7	17.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1912.4	17.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	2179.0	16.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	3273.0	15	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	3296.6	14.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	18.9	0.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	22.4	0.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	23.0	0.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	29.2	0.4	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	29.3	0.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	31.6	0.4	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	37.1	0.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	49.7	0.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	51.4	0.7	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	52.5	0.7	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	59.4	0.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	68.5	0.9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	88.2	1.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	100.2	1.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	102.0	1.7	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	123.8	1.6	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	170.2	2.6	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	204.7	2.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	214.6	2.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	233.8	4.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	281.0	3.9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	303.9	4.4	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	315.3	4.1	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	353.7	4.6	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	379.2	4.9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	421.0	5.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	442.6	5.7	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	461.5	5.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	483.0	6.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	486.5	6.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	488.9	6	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	493.3	6.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	498.1	6.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	499.1	6.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	500.7	6.4	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	501.8	6.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	501.8	6.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	504.6	6.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	504.6	6.4	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	507.2	6.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	508.1	6.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	508.5	6.9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	508.7	6.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	510.7	6.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	510.8	6.4	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	511.1	6.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	514.0	6.4	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	514.0	6.6	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	514.6	6.4	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	514.9	6.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	516.2	6.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	518.4	6.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	518.6	6.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	530.4	6.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	532.5	6.9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	532.9	6.7	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	539.9	6.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	562.3	7.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	566.1	7.1	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	568.8	7.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	608.4	7.4	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	632.6	7.9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	647.5	8.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	654.3	8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	713.9	8.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	720.7	8.9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	728.2	9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	735.9	9.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	744.9	9.1	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	791.5	9.9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	798.5	10	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	807.1	9.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	808.5	10.1	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	812.1	9.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	813.9	9.9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	816.3	10.1	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	821.7	10	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	828.4	10	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	832.4	10.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	838.6	10.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	883.3	10.9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	900.0	10.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	933.2	11.6	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	948.7	11.7	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	957.7	11.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	984.7	12.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	992.2	11.9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1016.3	20.7	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1050.9	21.7	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1077.1	22.6	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1096.3	18.7	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1113.9	19.6	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1126.9	19.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1133.6	19.1	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1170.3	21.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1173.6	26.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1189.9	18.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1215.1	20	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1292.4	19.2	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1332.0	20.1	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1467.5	17.7	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1479.3	17.7	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1517.8	22.7	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1522.3	19.1	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1583.1	18.9	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1600.7	17.8	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1772.3	17.3	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	1863.8	35.5	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	2417.1	15.6	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	2466.9	16	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	2793.3	130	Cina et al., 2009
LOWER SIWALIK	ITANAGAR SECTION	ITANAGAR	2833.4	16.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	33.4	1.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	47.9	2.1	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	49.7	2.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	50.0	2.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	50.4	2.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	51.4	1.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	53.9	4.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	56.5	3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	58.1	2.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	59.3	2.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	63.0	2.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	74.9	4.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	75.8	3.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	86.1	4.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	87.3	7.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	92.5	6.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	102.9	4.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	109.8	9.1	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	112.7	5.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	124.8	1.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	145.6	7.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	148.5	2.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	204.3	2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	205.6	6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	251.8	1.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	350.1	5.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	428.0	6.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	431.6	4.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	433.4	4.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	463.2	3.5	Cina et al., 2009

MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	465.8	7.1	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	467.5	3.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	474.3	8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	478.9	2.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	484.2	4.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	485.1	8.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	486.4	5.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	486.8	2.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	486.9	10.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	497.6	16.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	500.4	5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	500.7	13.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	501.2	12.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	501.8	3.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	504.3	4.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	505.9	6.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	509.5	5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	514.8	3.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	531.2	14.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	532.8	12.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	537.2	2.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	540.1	16.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	638.0	16.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	670.2	4.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	674.4	6.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	783.7	18.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	787.0	4.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	854.7	14	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	934.2	8.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	977.5	23.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1015.4	25.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1018.9	18.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1021.4	97.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1072.3	14.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1105.6	13.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1126.3	67.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1128.5	23	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1149.9	35.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1157.1	61.1	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1163.1	11.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1180.5	20	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1180.6	17.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1187.7	14.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1226.1	21.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1226.6	39.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1235.8	34.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1246.6	8.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1297.0	8.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1351.1	27.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1366.1	8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1463.6	12	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1473.2	37.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1510.7	11.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1534.6	17.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1589.4	7.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1606.9	6.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1615.2	17.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1620.7	9.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1638.2	20.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1642.6	13.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1654.8	11.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1660.2	15.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1660.7	6.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1675.9	10.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1686.9	10.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1710.1	6.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1769.6	12	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	2305.4	5.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	2748.3	11.1	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	3065.3	4.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	32.5	2.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	47.2	0.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	49.8	0.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	50.2	2.1	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	51.4	1	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	56.4	1	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	57.6	5.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	62.4	4.1	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	66.8	4.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	71.4	3.1	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	77.3	2.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	79.1	4.1	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	81.9	5.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	85.4	2.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	92.3	4.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	99.7	3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	99.9	3.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	101.4	1.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	110.0	1.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	125.6	3.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	132.2	5.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	257.1	22.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	284.5	11.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	397.6	7.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	425.7	7.1	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	442.9	13.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	452.2	4.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	460.8	4.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	465.7	4.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	469.4	5.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	478.2	5.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	480.0	8.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	482.3	7.1	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	483.0	8.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	483.3	13	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	488.7	5.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	491.1	5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	493.1	10.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	493.7	6.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	499.6	6.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	503.2	4.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	505.5	8.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	511.0	4.9	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	524.7	11.5	Cina et al., 2009
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MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	621.8	13.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	650.3	13.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	690.8	34.2	Cina et al., 2009
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MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	800.8	10.8	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	804.4	10.7	Cina et al., 2009
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MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	897.3	21.3	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	937.6	11.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1001.5	9.4	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1011.7	11.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1053.7	9.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1059.1	9.8	Cina et al., 2009
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MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1178.3	13.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1183.5	10.8	Cina et al., 2009
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MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1206.1	19.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1252.6	16.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1276.1	44.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1276.7	61.6	Cina et al., 2009
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MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1409.9	16.5	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1419.6	12.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1497.8	50.7	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1535.1	16.3	Cina et al., 2009
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MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1713.2	45.6	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1731.2	29.2	Cina et al., 2009
MIDDLE SIWALIK	ITANAGAR SECTION	ITANAGAR	1796.6	22.9	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	499.6	3.3	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	504.4	6.6	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	512.2	10	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	515.6	8.7	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	534.2	9.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	534.2	10.5	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	536.3	4.3	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	808.7	7.1	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	814.1	6.2	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	824.6	9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	848.7	13.8	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	862.1	8.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	873.4	15	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	894.8	9.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1012.2	29.2	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1055.3	82	Cina et al., 2009

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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1094.4	19.8	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1134.8	76.5	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1136.7	23.8	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1144.6	9.9	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1193.3	83.1	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1199.4	27.4	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1214.9	63	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1338.3	38	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1422.4	22.1	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1443.4	17.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1492.7	37.7	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1546.2	114	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1562.0	18.3	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1577.7	7.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1608.1	8	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1614.1	15.3	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1633.6	13.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1642.8	10.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1644.0	13.3	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1668.7	32.2	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1682.1	9.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1748.8	14.1	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	2399.1	9.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	2470.7	6.1	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	33.5	0.8	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	58.1	1.5	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	60.6	0.7	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	61.8	1.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	62.1	1	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	62.1	1.2	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	67.1	1.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	82.2	1	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	98.8	1.8	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	234.8	5	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	372.6	23.5	Cina et al., 2009
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UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	447.8	6.5	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	452.1	10.3	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	452.3	18.1	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	452.7	4.4	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	453.0	4.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	461.2	10.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	465.6	19.3	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	467.4	4.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	468.3	6.5	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	472.6	4.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	473.0	6.7	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	478.2	6.2	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	478.5	22.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	479.3	17.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	482.7	5.4	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	486.9	21.7	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	507.3	9.5	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	508.3	4.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	514.0	6.1	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	515.4	13.7	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	518.4	10.4	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	526.2	17.1	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	528.7	9.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	532.0	5.1	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	534.8	7.2	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	575.3	9.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	629.1	11	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	678.2	23	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	703.7	6.7	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	727.5	6.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	749.8	12.2	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	768.3	10.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	784.3	17.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	802.0	7.5	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	807.5	8.2	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	834.5	7.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	834.6	8.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	879.9	8.2	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	938.7	14.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1008.4	22.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1017.0	11.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1019.2	9.4	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1059.5	9.8	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1070.7	14	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1080.4	16.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1090.5	10	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1102.0	18.1	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1116.2	24.3	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1125.5	10.3	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1138.9	12.1	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1165.5	16.1	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1175.9	17.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1187.3	19.7	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1236.9	11.8	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1262.9	11.5	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1267.5	12.7	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1288.1	33.2	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1353.9	73.3	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1364.4	34.3	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1367.6	19.3	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1465.2	14.2	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1478.2	18.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1501.9	13.4	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1513.8	19.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1523.0	26	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1545.0	19.2	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1551.9	13.8	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1575.7	27.4	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1604.4	21.2	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1622.0	21.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1699.0	30.8	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	1724.6	23.9	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	2345.6	24.6	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	2471.2	32.8	Cina et al., 2009
UPPER SIWALIK	ITANAGAR SECTION	ITANAGAR	2646.4	28.7	Cina et al., 2009
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1613.8	10.42	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1139.7	5.66	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	59.0	4.85	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	36.3	4.36	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	680.3	13.14	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	53.1	4.09	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	47.9	3.28	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1261.8	60.13	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1259.2	9.26	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	67.6	2.51	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	74.5	2.46	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	161.0	3.63	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	46.2	2.09	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	39.3	5.21	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	479.4	6.83	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1440.0	99.96	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1572.8	7.63	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	475.3	7.63	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	475.3	9.41	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1136.8	28.58	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	465.1	9.83	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	57.8	4.73	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	43.7	2.77	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1659.3	21.38	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1616.7	16.94	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1605.6	25.85	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	611.5	22.3	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	74.9	2.32	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	469.2	11.15	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	790.4	27.59	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	57.4	1.32	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	467.6	7.36	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	973.0	18.79	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	54.7	0.79	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	123.4	5.81	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	498.8	24.04	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	305.5	23.24	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	856.7	38.45	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	13.6	0.39	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1556.0	2.78	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	434.5	17.76	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	491.9	6.94	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	76.8	4.04	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1164.3	11.28	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	251.2	11.62	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	65.7	2.71	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1161.4	28.16	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	56.1	1.16	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1641.4	3.3	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1088.0	16.33	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1590.3	16.69	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	48.8	7.66	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	54.8	5.1	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	635.4	11.42	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	53.1	3.09	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	474.5	4.43	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	114.8	2.95	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1609.0	2.91	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	935.9	12.89	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	74.3	2.26	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	265.3	4.93	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	40.8	1.44	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1133.9	23.87	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	987.3	15.26	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	979.0	15.48	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	77.8	7.48	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1489.5	3.63	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	98.3	2	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	428.0	9.24	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	30.7	2.27	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	899.9	18.77	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	107.9	1.8	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	217.0	7.93	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	436.3	11.14	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	40.7	1.43	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	39.6	0.48	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	14.1	7.89	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1636.2	12.93	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1171.8	7.86	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	110.4	2.32	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	76.8	1.67	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	24.0	1.58	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1569.6	13.03	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	77.3	2.26	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	55.3	2.8	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1183.3	51.16	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1639.8	1.33	Lang et al., 2013
MODERN ALLUIVUM	S1	SIANG RIVER (NUBO)	1600.9	12.82	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	848.4	12.42	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	37.1	1.93	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	68.4	2.04	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	49.1	2.63	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	490.2	7.93	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	211.8	2.5	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1185.4	67.57	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	111.3	3.62	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	591.0	25.64	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	482.2	32.89	Lang et al., 2013

MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	613.6	16.33	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1033.5	10.27	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1673.7	5.38	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	199.2	7.83	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	125.7	5.28	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	805.4	10.79	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	47.6	1.9	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	507.5	19.33	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	111.9	7.85	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	525.0	16.38	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	124.9	2.46	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	19.8	1.11	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	467.6	9.64	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	850.1	76.01	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1308.4	7.76	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	465.9	16.38	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	80.0	3.89	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1379.6	49.39	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	824.1	14.35	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	422.3	9.78	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	503.2	6.55	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	107.4	1.95	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	233.5	21.76	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	44.2	1.46	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	374.2	23.05	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	121.5	15.45	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	121.0	2.39	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	74.4	2.53	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1171.8	16.63	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	46.3	3.29	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	2171.4	6.53	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	321.9	17.07	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	49.4	3.99	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	38.0	1.43	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1102.4	24	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	49.1	2.74	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1396.7	57.07	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1586.8	14.41	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	52.4	5.09	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	473.9	20.28	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	47.1	2.58	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1148.6	29.02	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1169.0	5.12	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	56.0	2.16	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	418.8	19.08	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	57.2	3.43	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	61.6	4.12	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	109.6	3.09	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	63.8	4.79	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1186.9	13.17	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	45.8	2.21	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	48.6	1	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	507.5	10.56	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	118.7	7.15	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1756.2	9.11	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1456.3	108.63	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	44.2	1.34	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	65.6	1.9	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	1172.9	16.43	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	69.1	4.72	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	500.6	10.41	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	2603.7	54.76	Lang et al., 2013
MODERN ALLUIVUM	S3	SIANG RIVER (KAPU)	27.0	0.67	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	1172.9	11.02	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	209.2	4.85	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	61.7	3.68	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	504.5	12.15	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	793.6	11.29	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	60.4	2.72	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	53.7	2.98	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	28.2	1.06	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	619.1	9.23	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	191.5	4.73	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	1048.5	120.49	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	209.2	27.81	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	1321.7	17.04	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	476.9	4.86	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	69.3	3.99	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	1151.9	13.02	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	46.9	1.14	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	115.3	1.41	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	39.8	4.01	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	791.7	31.64	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	63.6	4.03	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	581.9	6.58	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	44.9	1.63	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	1641.8	12.41	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	1179.1	33.2	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	116.6	5.81	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	65.7	4.58	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	116.7	1.26	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	964.3	12.24	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	473.7	2.76	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	22.1	5.01	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	539.0	6.26	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	111.9	2.6	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	1685.8	4.91	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	39.0	1.3	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	1550.8	4.35	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	432.6	36.08	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	479.0	14.85	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	39.1	3.13	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	21.2	5.31	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	1677.7	92.48	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	25.0	2.92	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	1536.2	11.98	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	312.7	4.84	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	775.0	73.91	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	1066.9	28.05	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	1701.8	5.42	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	275.2	10.77	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	745.7	30.24	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	502.1	16.1	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	59.1	1.2	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	1561.5	24.09	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	70.8	1.78	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	115.0	1.57	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	24.1	0.7	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	382.2	27.63	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	460.1	6.96	Lang et al., 2013
MODERN ALLUIVUM	S2	SIANG RIVER (TUTING)	742.2	11.63	Lang et al., 2013

2.11 Appendix

2.11.1 Analytical details

For analyses conducted at the University of Arizona LaserChron center:

U, Pb, and Th isotopes were measured simultaneously. Measurement error for $^{206}Pb/^{238}U$, $^{206}Pb/^{204}Pb$, $^{206}Pb/^{207}Pb$ isotopic ratios are typically ~1-2% (two sigma level) except for youngest grains with low ^{207}Pb signals. ^{204}Hg interference is accounted for by direct ^{202}Hg measurement during each analysis and subtraction of ^{204}Hg according to the natural ratio: $^{202}Hg/^{204}Hg = 4.35$. Common Pb correction assumes an initial Pb composition from Stacy and Kramers (1975),with uncertainties of 1.5 for $^{206}Pb/^{204}Pb$ and 0.3 for $^{207}Pb/^{204}Pb$. Isotopic fractionation is corrected from mid-run analyses of multiple (Sri Lankan and R33 zircon) standards. Analytical data was post-processed using NUPMagecalc and ISOPLOT (Ludwig, 2008) with the following standard age filters:

1. 10% error cutoff for $^{206}Pb/2^{38}U$ and $^{206}Pb/^{207}Pb$ ratios
2. 30% maximum discordance and 5% maximum reverse discordance
3. $^{206}Pb/^{238}U$ ages preferred over $^{206}Pb/^{207}Pb$ ages under 1000 Ma.
4. 500 cps cutoff for excess ^{204}Pb.

Individual grain analyses were inspected to determine the preferred age, occasionally allowing slightly larger $^{206}Pb/^{238}U$ error for young ages and higher ^{204}Pb for grains with very high U concentrations (not to exceed 1000 cps).

For analyses conducted by Apatite to Zircon, Inc.:

During analytical scans, the fractionation of individual isotopes was modeled by twice fitting a sum of 10 Gaussian equations to the raw signal data, before and after outlier elimination. Common Pb correction similarly assumes an initial Pb composition from Stacy and Kramers (1975). Isotopic fractionation is corrected from prior and mid-run analyses of multiple (Duluth Anorthosite, Fish Canyon Tuff, Tardee, Tioga Bed, Mount Dromedary, Temora, Nancy, Mud Tank Carbonatite) standards, this includes correction over multiple scans and for alpha-ejection damage (Donelick et al. 2010). Only concordant analytical scans (defined as overlapping $^{206}Pb/^{207}Pb$, $^{206}Pb/^{238}U$, $^{207}Pb/^{235}U$ ages within two sigma) were selected to calculate grain ages. The preferred age was selected based on minimizing the relative error of each age. Several analyses within sample 75b contained multiple analyses per pit (denoted with an ‘a’ or ‘b’ in the Grain ID). A simple weighted mean age was calculated for these grains.

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CHAPTER 3. Erosion of the Tsangpo Gorge by megafloods, eastern Himalaya

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3.0 Abstract

At the southeastern margin of the Tibetan Plateau, the Yarlung-Tsangpo River plunges through the Himalaya to drop >2 km through the Tsangpo Gorge. Upstream, relict glacial dams and impounded lake terraces suggest that Quaternary lakes as large as 800 km^3 catastrophically drained through the gorge as megafloods. We report on new megaflood deposits downstream of the gorge and use detrital zircon U-Pb provenance data to demonstrate that these high-magnitude events originated in Tibet, and more effectively focused erosion in the gorge than both the extremely erosive modern peak flows and one of the largest landslide-dam outburst floods ever documented. Our findings support the proposition that in this steep, narrow gorge, where hillslope angles are near the threshold angle of bedrock failure, megafloods provide a mechanism to rapidly evacuate hillslope material and focus erosion on channel adjacent hillslopes. Although megaflood frequency remains unconstrained, we demonstrate the capability of these events to contribute substantially to rapid exhumation in this region.

3.1 Introduction

Where the Yarlung-Tsangpo River (southeastern Tibetan Plateau) descends through the easternmost Himalaya, it carves the Tsangpo Gorge, a <200-m-wide, 200-km-long bedrock knickzone descending more than 2 km between two peaks with elevations >7 km (Figure 1A). Within the gorge, high stream power and high topographic relief (Finnegan et al., 2008) drive contemporary erosion rates of >5 mm/yr (Larsen and Montgomery, 2012) and possibly as high as 10 mm/yr (Stewart et al., 2008) (Figure 1C). On a longer time scale, focused erosion has exhumed the Namche Barwa massif, an active crustal-scale antiform (Burg and Podladchikov, 1999), at an average rate of 3–5 km/m.y. since 5–10 Ma (Booth et al., 2004, 2009), and at a rate as high as 10 km/m.y. since 3–5 Ma (Burg et al., 1998; Seward and Burg, 2008*;* Enkelmann et al., 2011). This co-occurrence of focused surface erosion and active rock uplift led previous researchers to hypothesize a self-sustaining relationship between the two, localized to the gorge region since at least 3–5 Ma (Zeitler et al., 2001).

During the Quaternary (after 2.6 Ma), glacial ice and debris from Tibetan tributaries impounded massive lakes on the Yarlung-Tsangpo River in the immediate headwaters of the Tsangpo Gorge, with volumes estimated to be as much as ~800 km3 (Montgomery et al., 2004; Korup and Montgomery, 2008). Glacial ice and debris dams of main stem valleys by tributary glaciers often fail by overtopping or ice-marginal breaching, producing some of the largest freshwater floods on Earth (O'Connor et al., 2013). These megafloods may generate extreme discharges of water (>106 m3 s–1) capable of focused downstream erosion (O'Connor et al., 2013) and sparse slackwater deposition in hydraulically sheltered areas (Atwater, 1984). Glacial moraines crosscut by the river at the entrance to the Tsangpo Gorge, and immediately downstream of multiple lake terrace levels extending throughout the upstream drainage network (Montgomery et al., 2004; Chen et al., 2008), provide evidence for lake impoundment and the possibility that megaflooding recurred. Here we present new evidence that megaflooding through the Tsangpo Gorge preferentially eroded the Namche Barwa massif where it is exposed in the gorge.

3.2 Methods

3.2.1 Sampling

All samples collected for the new analyses included in this work were collected as random "grab" samples from active channel bars and banks or freshly exposed faces of flood deposits. Modern sedment samples were collected during low-flow periods in 2004, 2005, 2008, and 2011. When sampling active channel bedload, care was taken to avoid contamination from 2000 flood overbank deposits or recent landslides.

3.2.2 U-Pb and petrographic analyses

Samples were wet sieved into multiple size fractions. Standard magnetic and density separations were used to isolate dense minerals from the 63-250 um size fraction; the remaining light mineral fraction was mounted on petrographic slides, etched and stained to distinguish feldspars. Over 300 grains were manually counted on polished grain mounts using the line traverse method following the Gazzi-Dickinson classification scheme with an Olympus BX50 polarizing microscope. Zircons were further separated to near 100% purity, and poured onto grain mounts, polished and imaged by high resolution backscattered electron and cathodoluminesence imaging on an Hitachi 3400N SEM at the University of Arizona. Zircons cores were randomly analyzed for U-Th-Pb by laser-ablation multi-collector inductively coupled mass spectrometry (LA-MC-ICPMS) using a 30 um spot diameter at the Arizona LaserChron Center (Gehrels, 2011).

3.2.3 Synthetic CDF mixture modeling

We iteratively compared modeled cumulative probability density functions of zircon U-Pb crystallization ages <1000 Ma (older ages in this region are not diagnostic of a specific source area) to the observed sample CDFs for all combinations of four upstream sources (numbers correspond to numbered locations in Figure1B): 1. Yarlung Tsangpo river at Pai; 2. the Layue Qu tributary; a mean CDF from two statistically indistinguishable grain-age populations from the Yigong (3.) and Parlung (4.) tributaries; and 5. a small tributary draining the western flank of the Namche Barwa Massif (proxy for the Tsangpo Gorge). Best fit synthetic CDFs were determined using two fit metrics, both reported in Figure 3B. The first uses a two sample Kolmogorov-Smirnov test, the second is the total absolute difference between the model and observation. Importantly, this modeling approach assumes an efficient fluvial system with little sediment storage in the Tsangpo Gorge itself, an assumption that is consistent with our observations and those of Stewart et al. (2008) and Finnegan et al. (2008). Furthermore this approach assumes there is no significant variability in source rock zircon concentration. Several datasets indicate this assumption is reasonable; as noted by Stewart et al. (2008) and Booth et al. (2004), zirconium concentration is broadly uniform across the region, and Garzanti et al. (2004), as well as our own observations of estimated zircon percentage by weight, confirm that there is no significant variation in zircon concentration in detrital sediments sampled from this region.

3.2.4 Estimating bed shear stress during peak discharges

To quantify the amount of erosion across the specturm of discharges presented in this paper, we modeled the bed shear stress as a function of flow depth and hillslope angle for a trapezoidal river valley. Then, using estimated values of peak discharge for annual flows, the 2000 flood event and two megaflood magnitudes, we solved for the bed shear stress in a simple trapezoidal valley and the intermediate axis length of a median block size that could just be moved by that flow. See appendix for specific discharge and variable values used in calculations.

Our calculations followed the approach of Lamb and Fonstad (2010) where

$$Q = 8.1A\left(\frac{\tau_b}{\rho}\right)^{\frac{1}{2}}\left(\frac{h}{k_s}\right)^{\frac{1}{6}} \tag{1}$$

h is the flow depth and A is the cross sectional area of the flow, which we modeled as a trapezoidal valley

$$A = \left(\frac{h^2}{\tan\phi}\right) + wh \tag{2}$$

w is the flat bottom width. Bed shear stress τ_b is

$$\tau_b = \rho g h_r S \tag{3}$$

h_r is the hydraulic radius, closely approximated by mean depth $\bar{h}$

$$h_r = \frac{A sin\phi}{2h+w} \cong \bar{h} \tag{4}$$

Using τ_b we solve for the intermediate axis length of a median block size $\overline{D_2}$ using the relation

$$\tau_{*c} = 0.15S^{0.25} \tag{5}$$

for the critical stress for incipient motion from Lamb et al. (2008) and citations therein

$$\overline{D_2} = \frac{\tau_b}{\tau_{*c}g(\rho_s-\rho)} \tag{6}$$

for the bed shear stress for suspension

$$\tau_b = \rho(0.8w_s)^2 \tag{5}$$

using the settling velocity w_s approximated from Ferguson and Church (2004)

$$w_s = \frac{RgD^2}{C_1\upsilon + (0.75C_2RgD^3)^{0.5}} \tag{8}$$

where

$$R = \frac{\rho_s - \rho}{\rho} \tag{9}$$

3.3 Discussion

3.3.1 Slackwater deposits

We identified slackwater deposits in hydraulically sheltered areas along the main stem of the Yarlung Tsangpo (locally named Siang) River and at local tributary mouths downstream of the Tsangpo Gorge at elevations as much as 150 m above the modern channel. These deposits drape existing topography, in many cases unconformably overlying bedrock or unreworked landslide deposits. Four identified deposits, as much as 30 m above the modern channel, originated from an A.D. 2000 flood (Evans and Delaney, 2011) resulting from the temporary impoundment of the Yigong River by a massive landslide 40 km upstream of the Tsangpo Gorge (Figure 1B). The 2000 flood deposits are generally very fine to medium-grained sand with millimeter-scale coarse-grained laminations and occasional scour features within fining-upward and massive sequences, indicating deposition from suspension. The deposits are tabular and laterally extensive, with vegetated surfaces occasionally capped by landslide debris. Four additional deposits span higher elevations as much as 120 m above the 2000 flood deposits; these higher deposits are also very fi ne to medium sands, with occasional scour features and isolated pebbles. Unlike the 2000 flood deposits, the higher deposits show moderate soil development and destruction of primary depositional features by bioturbation; they are commonly overlain by poorly sorted, angular to subangular landslide deposits. Based on their similarity to the 2000 flood deposits, we interpret these older, higher deposits to have originated from megaflood events. In contrast to the megaflood deposits, alluvial terraces in the valley are characterized by discontinuous lenses of coarser grained sand that exhibit fluvial bedforms (e.g., cross-bedding) and are overlain by subrounded, imbricated gravel consistent with fluvial bedload transport.

Petrographic and detrital zircon U-Pb data indicate that the 2000 flood and megaflood sediments reflect a mixed Tibetan and Himalayan provenance (Figure 2), indicating that these floods originated in Tibet and entrained some amount of Himalayan input prior to deposition. In this region, detrital zircon U-Pb crystallization ages younger than 1000 Ma are characteristic of two primary sources: Tibetan zircons are younger than 300 Ma (Cina et al., 2009; Zhang et al., 2012), whereas Himalayan zircons are typically older than 300 Ma with a peak probability density ca. 500 Ma (Stewart et al., 2008; Cina et al., 2009; Amidon et al., 2005), except anatectic zircons younger than 30 Ma observed only in the Namche Barwa massif (Booth et al., 2009). These anatectic zircons are further distinguishable by high U/Th ratios of >10 (Booth et al., 2004; Zhang et al., 2012; see Hoskin and Schaltegger, 2003, for discussion; Figure 2). The U-Pb ages from Yarlung-Tsangpo River sediment upstream from the Tsangpo Gorge are dominantly Tibetan, and because zircon is an effective sediment tracer in this system (Stewart et al., 2008; Enkelmann et al., 2011), the downstream change in detrital Himalayan zircons is a proxy for the contribution of sediment flux originating within the gorge (Stewart et al., 2008)

(Figure 2A).

3.3.2 Tsangpo Gorge erosion

To constrain the contribution of sediment flux originating within the Tsangpo Gorge from each of three different events (the 2000 flood event, megaflood events, and the modern river discharge), we fi t cumulative probability density functions (CDFs) from observed U-Pb ages to modeled CDFs representing variable contributions from upstream source areas and the Tsangpo Gorge (Figure 3A). Our modeling confirms previous work (Stewart et al., 2008; Singh and France-Lanord, 2002; Garzanti et al., 2004) showing that the Tsangpo Gorge is the source of ~40%–50% of zircons in modern river sediment downstream, an impressive contribution from just ~2% of the Yarlung-Tsangpo drainage area (Figure 3B).

The best-fit models of the A.D. 2000 flood deposits require a smaller contribution of sediment from the Tsangpo Gorge and a large contribution specifically from the Yigong River, where the 2000 flood was sourced. This difference in provenance suggests that preferential erosion immediately downstream of the Yigong landslide dam and along the path to the Tsangpo Gorge diluted the gorge sediment contribution typical of modern river discharge. This interpretation is consistent with accounts of extreme erosion downstream of the breached dam by channel incision and landsliding (Evans and Delaney, 2011).

While megaflood samples contain both Tibetan and Himalayan age components, they are significantly enriched in both ca. 500 Ma Himalayan zircons and anatectic zircons younger than 30 Ma relative to modern river samples. Our modeling indicates that this enrichment is best explained by a nearly twofold increase in the contribution of zircons from the Namche Barwa massif rocks exposed in the Tsangpo Gorge. We interpret this increase to indicate preferential erosion of the gorge during megafloods that originated in Tibet, possibly by processes similar to those observed after the 2000 flood.

3.3.3 The role of megafloods

Larsen and Montgomery (2012) observed that the A.D. 2000 flood triggered landsliding along the channel immediately downstream of the failed dam, by eroding the base of channel adjacent hillslopes. Hillslope angles within the Tsangpo Gorge region are high (mode angles of 37°–39°) and decoupled from long-term (>105 yr) averaged erosion rates, suggesting that hillslope in this region are persistently near the threshold of slope failure (Larsen and Montgomery, 2012). In such a region characterized by threshold angle hillslopes, we expect large floods to act as an efficient mechanism to contemporaneously trigger landsliding and transport fi ne-grained soil and landslide debris downstream.

The combined influence of steep hillslopes and narrow river valleys maximizes flood depth and therefore bed shear stress. Calculations of bed shear stress for valley widths and hillslope angles similar to those observed in the Tsangpo Gorge indicate that peak megaflood discharges on the order of 106 m3 s–1 (Montgomery et al., 2004) are capable of moving landslide debris up to ~8–18 m in diameter (Figure 4), and fully suspending 1 m blocks (for calculation details, see the appendix). Given long-term exhumation rates of 5–10 km/m.y., a single event capable of removing this much material would be equivalent to ~1–4 k.y. worth of erosion.

Our results demonstrate the capability of Quaternary megafloods to preferentially erode the Tsangpo Gorge. While the number and recurrence intervals of such events are currently unknown, their impressive erosive potential raises the possibility that megafloods contributed substantially to the long-term exhumation of the gorge.

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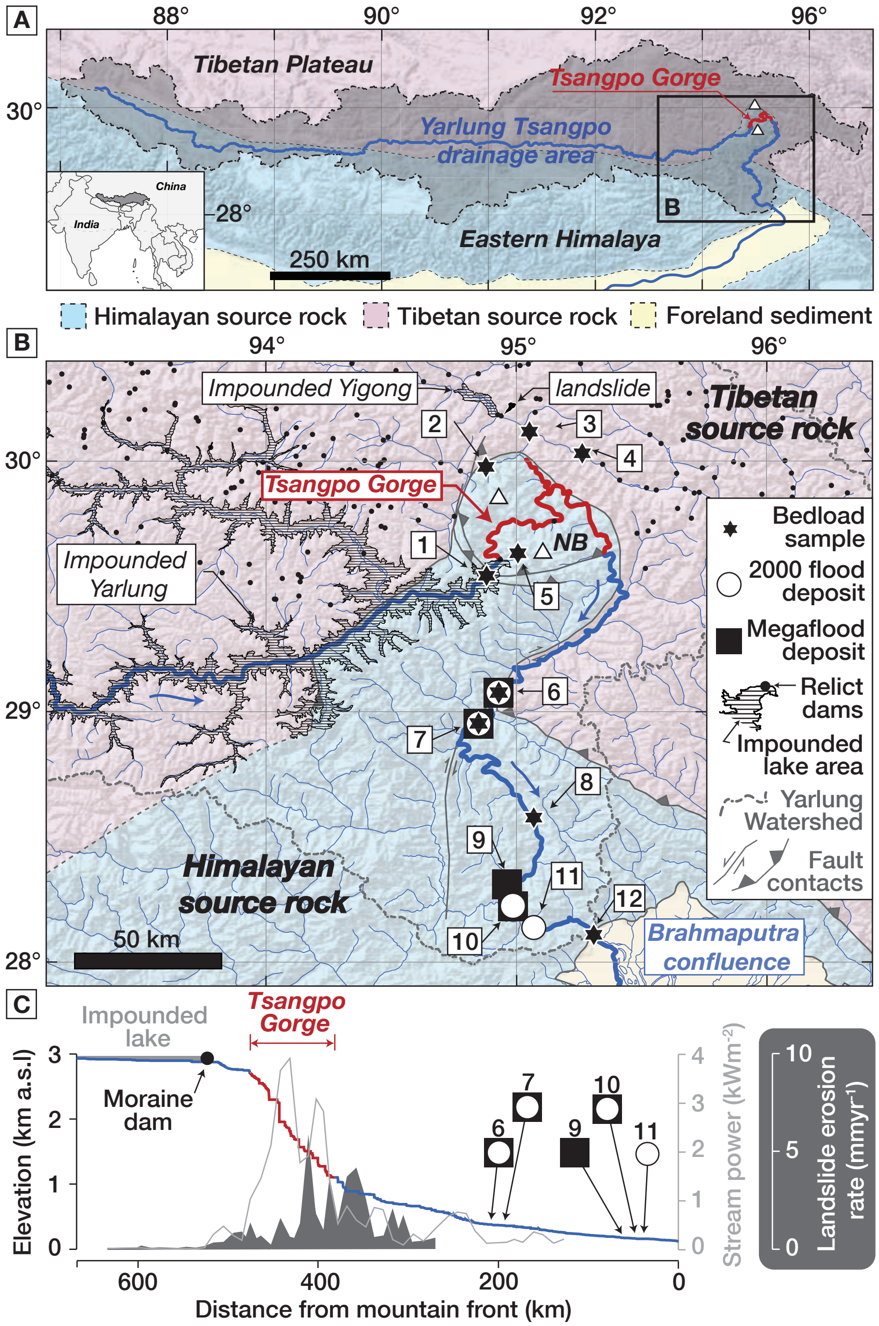
3.6 Figures

Figure 3.6.1 Location map and river profile

A: Location of Yarlung-Tsangpo River (Tibetan Plateau). Where the river turns southward and plunges from the Tibetan Plateau through the Tsangpo Gorge, it begins to erode Himalayan source rocks of the Namche Barwa massif (NB) (Booth et al., 2009; Zhang et al., 2012). B: Relict glacial dams upstream of Tsangpo Gorge record impoundment of massive Quaternary lakes (Montgomery et al., 2004; Chen et al., 2008; Korup and Montgomery, 2008), which catastrophically drained through the gorge. An A.D. 2000 landslide impounded the Yigong River, a tributary to the gorge; failure of the landslide dam released an analogous smaller-magnitude flood through the gorge. C: We sampled megaflood and 2000 flood slackwater deposits downstream of the gorge (adapted from Montgomery et al., 2004; Finnegan et al., 2008; Larsen and Montgomery, 2012), and modern river sediment samples (locations 3, 5–8) throughout the watershed where previously published data (locations 1, 2, 4, 12 from Stewart et al., 2008; Cina et al., 2009; Zhang et al., 2012) did not exist. Sample 5 is from a small cirque draining the western Namche Barwa massif; a.s.l.—above sea level.



A
88°
90°
92°
96°
30°
28°
Tibetan Plateau
Tsangpo Gorge
Yarlung Tsangpo
drainage area
China
India
B
Eastern Himalaya
250 km
Himalayan source rock
Tibetan source rock
Foreland sediment
B
94°
95°
96°
30°
29°
28°
Impounded Yigong
landslide
Tibetan
source rock
Tsangpo Gorge
NB
Impounded
Yarlung
Bedload
sample
2000 flood
deposit
Megaflood
deposit
Relict
dams
Impounded
lake area
Yarlung
Watershed
Fault
contacts
Himalayan
source rock
50 km
Brahmaputra
confluence
1
2
3
4
5
6
7
8
9
10
11
12
C
Impounded
lake
Tsangpo
Gorge
Moraine
dam
Elevation (km a.s.l)
Stream power (kWm⁻²)
Landslide erosion
rate (mmyr⁻¹)
Distance from mountain front (km)
600
400
200
0

Figure 3.6.2 Detrital analyses

A: Detrital zircon U-Pb crystallization age probability density functions (black lines) and kernel density estimates (gray) characterize two primary sources: Tibetan zircons are younger than 250 Ma, shown in the Tibetan tributaries flowing into Tsangpo Gorge (compiled from this study and Zhang et al., 2012); and gorge-derived Himalayan zircons are typically ca. 500 Ma, with small component of <30 Ma anatectic grains from the western side of Namche Barwa massif (Booth et al., 2004), shown in both a detrital sample from a small west-draining cirque and compiled bedrock ages from Namche Barwa massif (gray histogram from Booth et al., 2004; Zhang et al., 2012; n = 325). Inset bar shows proportion of young (<30 Ma) anatectic zircons sourced only from Namche Barwa (black) with U/Th of >10, and young igneous zircons (white) with U/Th of <10. Himalayan-age zircons in modern sediment downstream of Tsangpo Gorge (compiled from this study; Stewart et al., 2008; Cina et al., 2009) demonstrate the addition of zircons eroded from the gorge, including a few young anatectic grains. A.D. 2000 flood deposits show a similar proportion of gorge derived zircons, with slightly fewer anatectic grains. Megaflood deposits contain a much higher proportion of Himalayan zircons and anatectic grains sourced only from Namche Barwa, indicating extreme focusing of erosion in the gorge by megafloods. Sample numbers refer to locations in Figure 1. B: Petrographic analyses of flood sediments rule out local sources for the deposits and confirm a mixed provenance between Himalayan and Tibetan sources (Himalayan and Tibetan source data from Zhang et al., 2012; Garzanti et al., 2004). Q—quartz; F—feldspar; L—lithics.

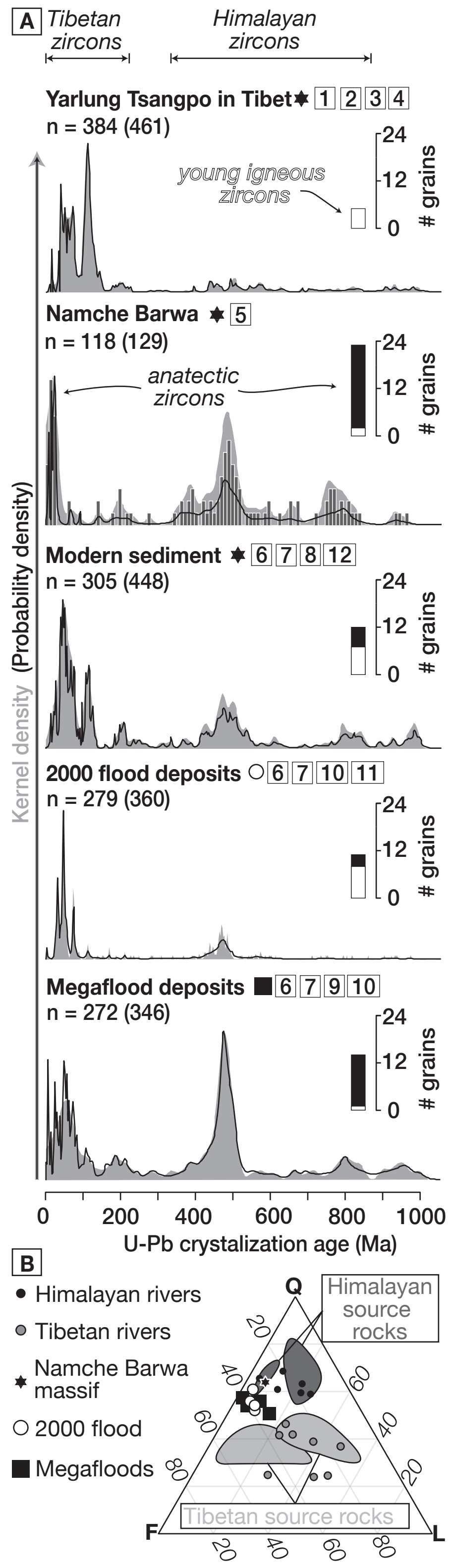

A
Tibetan zircons
Himalayan zircons
Yarlung Tsangpo in Tibet 1 2 3 4
n = 384 (461)
young igneous zircons
24
12
0
grains
Namche Barwa 5
n = 118 (129)
anatectic zircons
Modern sediment 6 7 8 12
n = 305 (448)
2000 flood deposits 6 7 10 11
n = 279 (360)
Megaflood deposits 6 7 9 10
n = 272 (346)
Kernel density (Probability density)
0 200 400 600 800 1000
U-Pb crystalization age (Ma)
B
Himalayan rivers
Tibetan rivers
Namche Barwa massif
2000 flood
Megafloods
Q
F
L
Himalayan source rocks
Tibetan source rocks
20 40 60 80

Figure 3.6.3 Mixture modeling

A: Cumulative probability density functions (CDFs) for mixtures of four source-area samples and fi t of modeled CDF to observed CDFs of modern river sediment samples, an A.D. 2000 flood, and megaflood deposits. Sample numbers refer to locations in Figure 1. Models were fit using both the two-sample Kolmogorov-Smirnov (KS) test and the total difference (diff.) between the modeled and observed CDF. B: Best fit model results are insensitive to fit calculation, demonstrating a twofold increase in the contribution from the Tsangpo Gorge to megaflood deposits, relative to modern sediment. Modeling also demonstrates a significant contribution to the A.D. 2000 flood deposits from their source area in the Yigong River.

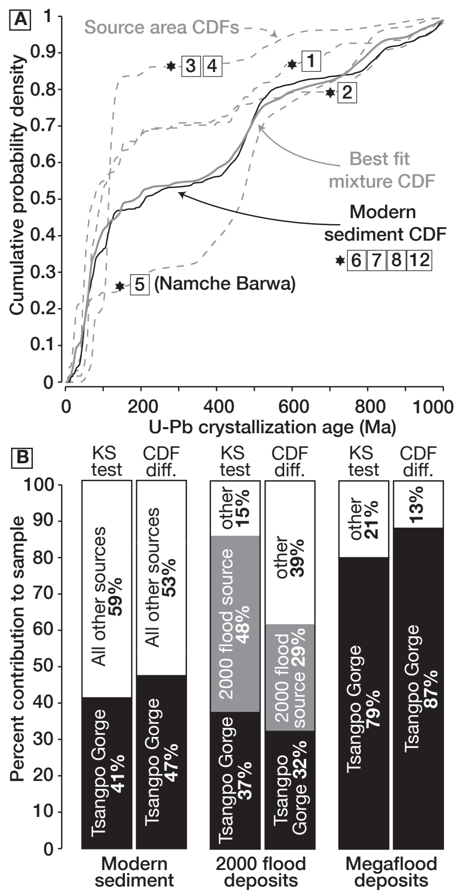
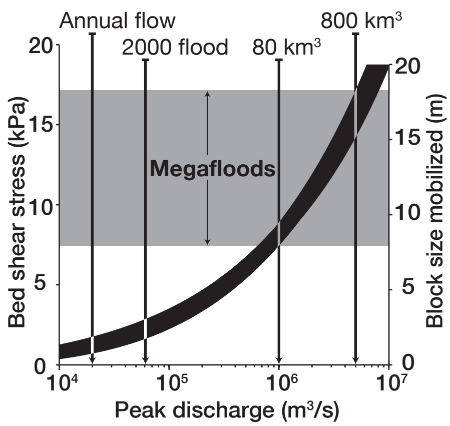

A
Source area CDFs
Cumulative probability density
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
3 4
1
2
Best fit
mixture CDF
Modern
sediment CDF
6 7 8 12
5 (Namche Barwa)
0
200
400
600
800
1000
U-Pb crystallization age (Ma)
B
Percent contribution to sample
100
90
80
70
60
50
40
30
20
10
0
KS test
CDF diff.
All other sources 59%
Tsangpo Gorge 41%
All other sources 53%
Tsangpo Gorge 47%
other 15%
2000 flood source 48%
Tsangpo Gorge 37%
other 39%
2000 flood source 29%
Tsangpo Gorge 32%
other 21%
Tsangpo Gorge 79%
13%
Tsangpo Gorge 87%
Modern sediment
2000 flood deposits
Megaflood deposits

Figure 3.6.4. Shear stress calculations

Calculation of bed shear stress and maximum intermediate axis diameter (block size) of mobilized blocks as a function of peak discharge through a 200-m-wide gorge. Narrow range of solutions (thickness of black line) shows that this relationship is insensitive to hillslope angle and valley width for values similar to those observed.



Annual flow
2000 flood
80 km³
800 km³
Megafloods
Bed shear stress (kPa)
Block size mobilized (m)
Peak discharge (m³/s)
0
5
10
15
20
10⁴
10⁵
10⁶
10⁷

3.7 Tables

3.7.1 Detrital zircon U-Pb data

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @ 7)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma) 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH05-1	443	1656	38.7	11.1403	83.6	0.0143	89.4	0.0012	31.5	0.35	7.4	2.3	14.4	12.8	1420.5	2117.7	7.4	2.3	NA
08KH05-2	108	42145	2	9.6009	1.4	4.3482	2.6	0.3028	2.3	0.86	1705	33.9	1702.5	21.8	1699.5	25.1	1699.5	25.1	100.3
08KH05-3	776	16045	1.7	23.1694	10.6	0.0385	10.9	0.0065	2.4	0.22	41.5	1	38.3	4.1	-158.3	264.9	41.5	1	NA
08KH05-4	656	21379	0.4	20.7173	7.4	0.0767	7.6	0.0115	1.8	0.23	73.8	1.3	75	5.5	112.5	175.2	73.8	1.3	NA
08KH05-5	866	17768	0.7	21.2172	5.6	0.0759	5.7	0.0117	1	0.18	74.9	0.8	74.3	4.1	55.9	134.4	74.9	0.8	NA
08KH05-6	1530	3255	5.4	16.9103	33.6	0.0056	35.7	0.0007	11.9	0.33	4.4	0.5	5.6	2	572.1	751.9	4.4	0.5	NA
08KH05-8	82	59812	2.3	13.7195	2.4	1.6951	3.1	0.1687	2	0.64	1004.8	18.5	1006.7	19.7	1010.8	48	1010.8	48	99.4
08KH05-9	423	150692	2.3	13.8718	0.6	1.5023	2.8	0.1511	2.7	0.97	907.4	22.8	931.3	16.9	988.5	12.7	907.4	22.8	91.8
08KH05-10	1980	12176	9.9	12.3808	1	0.7081	3.9	0.0636	3.8	0.97	397.4	14.7	543.6	16.5	1215.9	18.8	397.4	14.7	NA
08KH05-11	1101	28471	4.1	21.2315	5.1	0.0564	6.7	0.0087	4.3	0.65	55.7	2.4	55.7	3.6	54.3	121.7	55.7	2.4	NA
08KH05-12	166	102938	1.5	11.719	0.9	2.6174	1.9	0.2225	1.6	0.88	1294.9	19.2	1305.5	13.7	1323.1	17.5	1323.1	17.5	97.9
08KH05-13	3119	110665	2.3	21.3342	1.5	0.0542	2.9	0.0084	2.4	0.86	53.8	1.3	53.6	1.5	42.8	35.5	53.8	1.3	NA
08KH05-14	672	362024	5.4	14.1851	1.2	1.2947	6.4	0.1332	6.3	0.98	806.1	47.8	843.4	36.8	942.8	24.1	806.1	47.8	85.5
08KH05-15	601	7407	0.7	22.4142	19	0.0302	19.2	0.0049	3	0.15	31.6	0.9	30.2	5.7	-76.6	467.2	31.6	0.9	NA
08KH05-16	245	8873	0.8	22.8003	8.7	0.1089	9.5	0.018	4	0.42	115.1	4.5	105	9.5	-118.6	213.9	115.1	4.5	NA
08KH05-18	135	43002	4	15.3315	3.2	1.0883	3.8	0.121	2	0.54	736.4	14.1	747.7	20	781.6	67.1	736.4	14.1	94.2
08KH05-19	570	56904	2	11.9423	1	2.3251	2	0.2014	1.7	0.87	1182.7	18.6	1220	14	1286.4	18.9	1286.4	18.9	91.9
08KH05-20	1191	243003	1.9	17.4289	0.6	0.5544	2.6	0.0701	2.5	0.97	436.6	10.5	447.9	9.3	506	13.7	436.6	10.5	86.3
08KH05-21	836	135217	1.7	17.4328	0.9	0.6127	4.6	0.0775	4.5	0.98	481	20.7	485.3	17.6	505.5	20.1	481	20.7	95.1
08KH05-22	86	3776	0.6	12.5372	9.2	1.9824	15	0.1803	11.8	0.79	1068.4	116.6	1109.6	101.5	1191.1	181.7	1191.1	181.7	89.7
08KH05-23	79	4605	0.6	22.6507	40.6	0.073	41.2	0.012	6.9	0.17	76.8	5.3	71.5	28.5	-102.4	1035.7	76.8	5.3	NA
08KH05-24	77	54384	0.9	12.3121	2.1	2.3569	2.9	0.2105	1.9	0.66	1231.3	21.1	1229.6	20.3	1226.8	42.1	1226.8	42.1	100.4
08KH05-25	577	224149	2.8	7.6177	0.2	6.269	4.3	0.3464	4.3	1	1917.2	71.6	2014.1	37.9	2115.1	2.8	2115.1	2.8	90.6
08KH05-26	238	52656	2	17.3025	4.7	0.5027	5.1	0.0631	2	0.39	394.4	7.8	413.5	17.5	522	103.9	394.4	7.8	NA
08KH05-27	407	376442	201.6	12.5162	0.5	2.2635	1.2	0.2055	1	0.89	1204.6	11.4	1201	8.2	1194.5	10.5	1194.5	10.5	100.9

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @ 7)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios: 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma): 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH05-28	1117	35599	1.4	21.4001	1.8	0.0747	3.4	0.0116	2.9	0.84	74.3	2.1	73.1	2.4	35.4	43.7	74.3	2.1	NA
08KH05-29	250	253560	1.5	6.1156	0.2	10.4513	1.7	0.4636	1.7	0.99	2455.3	34.2	2475.6	15.7	2492.3	3.7	2492.3	3.7	98.5
08KH05-30	310	12376	1.2	21.7715	13.1	0.1094	13.6	0.0173	3.4	0.25	110.4	3.8	105.4	13.6	-6	318.1	110.4	3.8	NA
08KH05-31	137	123859	1.8	10.1853	0.8	3.8165	2.8	0.2819	2.6	0.96	1601.1	37.5	1596.2	22.3	1589.8	15.2	1589.8	15.2	100.7
08KH05-33	5008	67545	0.6	20.6338	0.8	0.079	44.2	0.0118	44.2	1	75.8	33.3	77.2	32.9	122	18.2	75.8	33.3	NA
08KH05-35	33	4679	1	17.6368	11.8	0.6575	12.6	0.0841	4.6	0.36	520.6	23	513.1	51	479.8	261.1	520.6	23	108.5
08KH05-36	714	135839	4.3	10.4846	0.5	2.6293	3.2	0.1999	3.2	0.99	1175	34.1	1308.9	23.6	1535.5	9.1	1535.5	9.1	76.5
08KH05-37	391	12295	2.6	21.8625	16.3	0.0535	16.6	0.0085	3	0.18	54.5	1.6	53	8.6	-16	396.5	54.5	1.6	NA
08KH05-38	85	31099	1.3	17.7859	9	0.6586	9.6	0.085	3.3	0.35	525.6	16.9	513.7	38.9	461.2	200.9	525.6	16.9	114
08KH05-39	2356	17189	1.1	17.123	2.4	0.6332	9.2	0.0786	8.8	0.96	488	41.6	498.1	36.1	544.8	53.5	488	41.6	89.6
08KH05-41	524	26081	0.7	21.7819	9.8	0.0809	10.1	0.0128	2.3	0.23	81.9	1.9	79	7.7	-7.1	237.6	81.9	1.9	NA
08KH05-42	166	193969	0.5	9.5767	0.8	4.2781	3	0.2971	2.9	0.96	1677.1	42.8	1689.2	24.8	1704.1	15.5	1704.1	15.5	98.4
08KH05-43	503	51026	4.1	19.4262	3.3	0.2366	3.8	0.0333	2	0.52	211.4	4.1	215.6	7.4	262.2	75.3	211.4	4.1	NA
08KH05-44	735	31073	24.4	20.0014	3.2	0.0861	15.1	0.0125	14.8	0.98	80	11.8	83.9	12.2	194.8	75	80	11.8	NA
08KH05-45	570	31693	9.2	11.6834	1.1	1.129	5.9	0.0957	5.8	0.98	589	32.5	767.3	31.7	1329	22.1	589	32.5	44.3
08KH05-47	854	9610	50	19.4755	13.5	0.0288	14.6	0.0041	5.5	0.38	26.2	1.4	28.9	4.1	256.4	311.7	26.2	1.4	NA
08KH05-48	509	26464	1.4	19.0522	5.4	0.0875	5.7	0.0121	1.8	0.32	77.5	1.4	85.2	4.6	306.7	122.4	77.5	1.4	NA
08KH05-49	534	587	0.6	17.4724	22.6	0.0894	22.8	0.0113	3.5	0.15	72.6	2.5	86.9	19	500.6	502.9	72.6	2.5	NA
08KH05-50	3835	5655	9.5	13.7755	0.6	0.2994	2.6	0.0299	2.6	0.97	190	4.8	265.9	6.2	1002.6	12.5	190	4.8	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 6)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
		204Pb		206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)		206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)			
08KH15-1	138	2619	1.1	18.3573	18.5	0.1337	19.4	0.0178	6	0.31	113.8	6.8	127.4	23.3	390.7	418.4	113.8	6.8	NA
08KH15-2	177	42883	0.6	17.2183	2.7	0.6522	3	0.0814	1.4	0.45	504.7	6.7	509.8	12.1	532.7	59.1	504.7	6.7	94.8
08KH15-3	5621	59917	0.8	20.6131	0.6	0.1458	24.4	0.0218	24.4	1	139	33.5	138.2	31.5	124.3	13.5	139	33.5	NA
08KH15-4	506	113126	1.4	17.2813	1.9	0.5415	4.2	0.0679	3.7	0.89	423.3	15.3	439.4	14.9	524.7	41	423.3	15.3	80.7
08KH15-5	852	128424	6.8	12.5244	5.6	0.1777	49.1	0.0161	48.8	0.99	103.2	49.9	166.1	75.3	1193.2	110.8	103.2	49.9	NA
08KH15-6	322	325094	1.3	10.4074	0.5	3.4839	1.4	0.263	1.3	0.93	1505	18	1523.6	11.4	1549.4	9.8	1549.4	9.8	97.1
08KH15-8	557	46159	2.1	12.4518	0.6	2.1467	4	0.1939	3.9	0.99	1142.3	41.1	1164	27.5	1204.6	11.7	1204.6	11.7	94.8
08KH15-9	4826	68824	5.2	20.7637	0.9	0.059	3.2	0.0089	3	0.95	57	1.7	58.2	1.8	107.2	22.3	57	1.7	NA
08KH15-11	361	173029	1.9	13.9802	1.4	1.3712	4.4	0.139	4.2	0.94	839.2	32.8	876.7	25.9	972.6	29.5	839.2	32.8	86.3
08KH15-12	2321	107137	2.3	17.3393	1.1	0.4666	4.7	0.0587	4.6	0.97	367.6	16.5	388.8	15.3	517.3	23.2	367.6	16.5	NA
08KH15-13	95	53621	0.9	12.5342	1.5	2.1246	2.3	0.1931	1.7	0.76	1138.3	18.2	1156.8	15.9	1191.6	29.8	1191.6	29.8	95.5
08KH15-14	98	28500	1.1	14.7939	1.2	1.2123	2.6	0.1301	2.3	0.89	788.3	16.9	806.2	14.3	856.2	24.6	788.3	16.9	92.1
08KH15-15	214	10697	1.8	23.566	28	0.0583	28.2	0.01	3.9	0.14	63.9	2.5	57.5	15.8	-200.7	712.8	63.9	2.5	NA
08KH15-17	340	57847	5.5	13.2133	5.7	0.6523	11.5	0.0625	10	0.87	390.9	38	509.9	46.2	1086.7	113.8	390.9	38	NA
08KH15-18	1956	88138	1.5	20.5751	2.5	0.0758	4	0.0113	3.1	0.77	72.5	2.2	74.2	2.9	128.7	59.7	72.5	2.2	NA
08KH15-20	290	16068	5.7	15.7745	3.1	0.3839	7.7	0.0439	7	0.91	277.1	19	329.9	21.6	721.4	65.8	277.1	19	NA
08KH15-21	1690	1960	5	17.3645	7.4	0.0567	17.4	0.0071	15.7	0.91	45.9	7.2	56	9.5	514.1	162	45.9	7.2	NA
08KH15-22	670	47372	0.8	20.6761	5	0.0778	5.5	0.0117	2.3	0.43	74.8	1.7	76.1	4	117.2	117.2	74.8	1.7	NA
08KH15-23	543	2014	1.2	17.8974	15.5	0.0934	15.7	0.0121	2.1	0.14	77.7	1.6	90.7	13.6	447.3	346.7	77.7	1.6	NA
08KH15-24	395	252962	1.1	13.0601	1.2	1.9306	8.4	0.1829	8.3	0.99	1082.6	82.8	1091.7	56.3	1110	24.7	1110	24.7	97.5
08KH15-25	273	130085	2.2	15.1623	1.2	1.2052	1.5	0.1325	0.9	0.63	802.3	7.1	803	8.4	804.9	24.6	802.3	7.1	99.7
08KH15-26	350	166636	1.5	12.671	0.4	2.1256	2.4	0.1953	2.3	0.99	1150.2	24.6	1157.2	16.3	1170.1	7.5	1170.1	7.5	98.3
08KH15-27	769	24691	1.1	22.1216	4.3	0.0736	5.4	0.0118	3.2	0.59	75.7	2.4	72.1	3.7	-44.6	105	75.7	2.4	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 6)

				Isotope ratios							Apparent ages (Ma)								
Grain	U (ppm)	206Pb 204Pb	U/Th	206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH15-28	2086	4457	31.6	14.0252	0.8	0.38	2.5	0.0387	2.4	0.95	244.5	5.7	327.1	7	966.1	15.6	244.5	5.7	NA
08KH15-29	982	25622	1.7	21.6659	8.6	0.0557	9.4	0.0088	3.6	0.39	56.2	2	55	5	5.7	207.6	56.2	2	NA
08KH15-30	455	49756	1.8	13.8476	0.9	1.5369	1.7	0.1544	1.5	0.87	925.3	12.9	945.3	10.6	992	17.4	925.3	12.9	93.3
08KH15-31	416	24844	0.8	22.5964	19.5	0.0725	20.6	0.0119	6.6	0.32	76.2	5	71.1	14.1	-96.5	482.5	76.2	5	NA
08KH15-32	197	45799	2.2	14.0477	1.4	1.4767	2.5	0.1504	2	0.82	903.5	17.1	920.9	15	962.8	29.3	903.5	17.1	93.8
08KH15-33	565	25575	1.6	15.9578	1.4	0.9378	1.8	0.1085	1.2	0.65	664.2	7.4	671.7	8.9	696.9	29.6	664.2	7.4	95.3
08KH15-34	637	28286	1.3	21.1854	9.9	0.0973	11.2	0.0149	5.2	0.47	95.6	5	94.3	10.1	59.5	235.5	95.6	5	NA
08KH15-35	1116	494126	5	8.847	0.4	4.2682	4.5	0.2739	4.4	1	1560.4	61.4	1687.3	36.6	1848.7	8	1848.7	8	84.4
08KH15-36	541	339766	2	12.6914	0.6	2.0744	1.2	0.1909	1	0.88	1126.5	10.5	1140.4	7.9	1166.9	11	1166.9	11	96.5
08KH15-37	394	19404	1.8	17.3158	2.7	0.5229	8.7	0.0657	8.3	0.95	410	32.8	427.1	30.3	520.3	58.2	410	32.8	78.8
08KH15-38	220	20973	1.2	20.0752	10.5	0.1748	10.9	0.0255	2.8	0.26	162	4.5	163.6	16.5	186.2	246.1	162	4.5	NA
08KH15-39	439	20697	2.7	20.3283	7.4	0.1235	8	0.0182	3	0.37	116.4	3.5	118.3	8.9	157	174	116.4	3.5	NA
08KH15-40	529	146123	1.6	13.2605	0.7	1.7737	2.2	0.1706	2	0.94	1015.3	19.1	1035.9	14	1079.5	14.5	1079.5	14.5	94.1
08KH15-41	2750	31340	5.4	19.647	3.8	0.0567	5	0.0081	3.2	0.64	51.9	1.6	56	2.7	236.2	88.3	51.9	1.6	NA
08KH15-42	68	32322	1	12.6696	2.4	2.0969	3.7	0.1927	2.9	0.77	1135.9	29.9	1147.8	25.6	1170.3	46.7	1170.3	46.7	97.1
08KH15-43	179	114303	1.1	11.3139	0.9	2.8266	1.6	0.2319	1.3	0.83	1344.7	15.7	1362.6	11.7	1390.9	16.5	1390.9	16.5	96.7
08KH15-44	552	264634	1.7	11.9198	0.3	2.3508	1.2	0.2032	1.1	0.96	1192.6	12.5	1227.8	8.5	1290.1	6.3	1290.1	6.3	92.4
08KH15-45	1070	22055	1.8	21.7124	6.7	0.0388	7	0.0061	2.1	0.31	39.3	0.8	38.7	2.7	0.6	160.7	39.3	0.8	NA
08KH15-47	540	19321	1.2	20.8584	8.1	0.0747	8.3	0.0113	2.1	0.25	72.4	1.5	73.1	5.9	96.4	190.9	72.4	1.5	NA
08KH15-48	1198	10288	2.5	10.4006	0.4	1.1067	7	0.0835	6.9	1	516.9	34.5	756.6	37.1	1550.7	7.5	1550.7	7.5	33.3
08KH15-49	278	301106	4.2	9.2117	0.5	4.538	1.2	0.3032	1.1	0.9	1707.1	16	1738	9.8	1775.3	9.3	1775.3	9.3	96.2
08KH15-50	106	12316	1.2	16.4562	7.6	0.6081	8.5	0.0726	3.8	0.44	451.7	16.5	482.4	32.7	631	164.7	451.7	16.5	71.6

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 6)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
		204Pb		206Pb* / 207Pb*	± (%)	207Pb* / 235U*	± (%)	206Pb* / 238U	± (%)		206Pb* / 238U*	± (Ma)	207Pb* / 235U	± (Ma)	206Pb* / 207Pb*	± (Ma)			
08KH15-53	764	64950	2.1	10.8344	0.6	2.6737	2.2	0.2101	2.1	0.97	1229.3	24	1321.2	16.4	1473.5	11	1473.5	11	83.4
08KH15-54	65	19582	3.2	14.4103	4.2	1.3506	5.1	0.1412	2.8	0.55	851.2	22.4	867.8	29.7	910.5	87.5	851.2	22.4	93.5
08KH15-55	224	232619	1.2	11.1745	1.1	3.065	4	0.2484	3.8	0.96	1430.2	49.1	1424	30.4	1414.6	20.1	1414.6	20.1	101.1
08KH15-56	372	97401	1.1	13.8048	0.9	1.5847	3.7	0.1587	3.6	0.97	949.4	32	964.2	23.2	998.3	18.3	949.4	32	95.1
08KH15-57	103	34063	1.3	12.7737	1.7	1.975	2.1	0.183	1.2	0.59	1083.2	12.3	1107	14.2	1154.1	33.7	1154.1	33.7	93.9
08KH15-58	221	102689	2.4	13.1461	1.3	1.3768	3.1	0.1313	2.8	0.9	795.1	20.6	879.1	18	1096.8	26.9	795.1	20.6	72.5
08KH15-59	1382	21337	3.2	12.199	1	0.6865	9.1	0.0607	9.1	0.99	380.1	33.5	530.7	37.8	1244.9	20.5	380.1	33.5	NA
08KH15-60	67	58865	1.5	12.5584	2.8	1.944	3.5	0.1771	2.2	0.62	1050.9	21.2	1096.4	23.7	1187.8	54.7	1187.8	54.7	88.5
08KH15-61	169	51221	2	15.7777	3.5	0.9609	3.9	0.11	1.7	0.45	672.5	11.1	683.7	19.4	721	73.9	672.5	11.1	93.3
08KH15-63	75	30581	1.2	12.7038	2.5	2.0698	3.3	0.1907	2.1	0.64	1125.2	21.6	1138.9	22.4	1165	50	1165	50	96.6
08KH15-64	144	54307	1.6	13.9001	2.6	1.6603	2.9	0.1674	1.3	0.43	997.7	11.6	993.5	18.2	984.3	52.8	997.7	11.6	101.4
08KH15-65	653	11948	1.6	21.4316	11.3	0.0726	11.7	0.0113	3	0.26	72.3	2.2	71.2	8.1	31.9	272	72.3	2.2	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH10-1	548	3146	44.1	18.6701	45.4	0.0404	45.5	0.0055	3.5	0.08	35.1	1.2	40.2	17.9	352.6	1077.2	35.1	1.2	NA
08KH10-2	288	4736	2.6	16.2694	253	0.0469	253.5	0.0055	6.1	0.02	35.6	2.2	46.6	115.9	655.6	0	35.6	2.2	NA
08KH10-3	222	37072	0.9	17.4954	2.7	0.5971	3	0.0758	1.4	0.46	470.8	6.3	475.4	11.5	497.6	59.2	470.8	6.3	94.6
08KH10-4	1303	19042	4.5	21.8306	7.2	0.0476	7.7	0.0075	2.8	0.37	48.4	1.4	47.2	3.6	-12.5	173.4	48.4	1.4	NA
08KH10-5	2590	59771	5.2	21.4726	3.4	0.0469	4.7	0.0073	3.3	0.7	46.9	1.5	46.6	2.1	27.3	80.7	46.9	1.5	NA
08KH10-6	1671	9606	1	17.5221	1.5	0.353	17.4	0.0449	17.4	1	282.8	48.1	306.9	46.2	494.3	33.8	282.8	48.1	NA
08KH10-7	1022	17897	1.1	21.6566	12.2	0.0474	12.6	0.0074	3.3	0.26	47.8	1.6	47	5.8	6.8	294.6	47.8	1.6	NA
08KH10-8	196	21227	0.6	17.7488	5.2	0.5881	5.6	0.0757	1.9	0.34	470.4	8.5	469.6	20.9	465.9	115.8	470.4	8.5	101
08KH10-9	482	7502	1.3	22.6831	22.9	0.0462	23.9	0.0076	7.1	0.3	48.8	3.5	45.8	10.7	-105.9	568.7	48.8	3.5	NA
08KH10-10	1514	23384	10.8	23.7129	8.5	0.0384	8.7	0.0066	1.9	0.22	42.4	0.8	38.3	3.3	-216.3	212.9	42.4	0.8	NA
08KH10-11	125	17836	1.7	15.8551	8.8	0.3985	9.9	0.0458	4.6	0.46	288.8	13	340.5	28.7	710.6	187.3	288.8	13	NA
08KH10-12	542	23688	0.4	16.9514	4.6	0.609	7.4	0.0749	5.8	0.79	465.4	26.2	482.9	28.5	566.8	100.2	465.4	26.2	82.1
08KH10-13	433	7841	2	27.1886	33.4	0.0378	33.7	0.0074	4.1	0.12	47.8	2	37.7	12.5	-572.6	924.8	47.8	2	NA
08KH10-14	401	15593	1	19.9951	11.8	0.1228	12.2	0.0178	3	0.24	113.8	3.4	117.6	13.5	195.6	274.9	113.8	3.4	NA
08KH10-16	632	4800	1.2	21.4789	14.2	0.0486	14.4	0.0076	2.5	0.17	48.6	1.2	48.1	6.8	26.6	342.7	48.6	1.2	NA
08KH10-17	176	5777	1.8	22.4997	16.1	0.1507	19.2	0.0246	10.6	0.55	156.6	16.3	142.6	25.6	-86	395.9	156.6	16.3	NA
08KH10-18	1031	13774	2.9	20.5221	7.9	0.0504	8.1	0.0075	1.7	0.21	48.2	0.8	49.9	3.9	134.7	185.2	48.2	0.8	NA
08KH10-19	1483	16892	2	21.4694	5.6	0.047	6.6	0.0073	3.5	0.53	47	1.6	46.6	3	27.7	135.2	47	1.6	NA
08KH10-20	515	2476	2	16.7643	16.1	0.0583	16.8	0.0071	5	0.3	45.5	2.3	57.5	9.4	590.9	350.6	45.5	2.3	NA
08KH10-21	1220	23525	7.9	21.2267	6.5	0.043	7	0.0066	2.7	0.39	42.6	1.2	42.8	2.9	54.8	154.8	42.6	1.2	NA
08KH10-22	917	13678	1.6	20.8374	13.8	0.0481	14.1	0.0073	3	0.21	46.7	1.4	47.7	6.6	98.8	328.5	46.7	1.4	NA
08KH10-23	236	149271	3.9	10.0897	0.9	3.2502	3.1	0.2378	2.9	0.95	1375.5	36.5	1469.2	24	1607.4	17.4	1607.4	17.4	85.6
08KH10-24	272	223756	3.8	12.1911	3.4	1.9793	11.2	0.175	10.6	0.95	1039.6	102	1108.5	75.4	1246.2	66.9	1246.2	66.9	83.4

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±		206Pb*	±	207Pb*	±	206Pb*	±			
		204Pb		207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
08KH10-25	445	6737	2	26.5035	28.9	0.0474	29.5	0.0091	6	0.2	58.5	3.5	47	13.6	-504.1	783.6	58.5	3.5	NA
08KH10-26	305	3806	1.1	14.412	17.6	0.071	20.7	0.0074	10.8	0.52	47.7	5.1	69.7	13.9	910.2	365.7	47.7	5.1	NA
08KH10-27	551	10478	1.5	22.7632	20.3	0.0461	20.4	0.0076	2.3	0.11	48.9	1.1	45.8	9.1	-114.6	504.8	48.9	1.1	NA
08KH10-28	220	31341	1.1	17.4079	4	0.6036	4.4	0.0762	1.9	0.42	473.5	8.5	479.5	17	508.7	88.7	473.5	8.5	93.1
08KH10-29	838	15097	3	23.0894	16.2	0.0444	16.8	0.0074	4.1	0.24	47.8	1.9	44.1	7.2	-149.7	405.4	47.8	1.9	NA
08KH10-30	606	60732	2.2	17.6402	1.5	0.567	2.5	0.0725	2	0.79	451.5	8.5	456.1	9.1	479.4	33.7	451.5	8.5	94.2
08KH10-31	400	42837	1.1	18.018	1.2	0.5807	1.8	0.0759	1.4	0.76	471.5	6.4	464.9	6.9	432.4	26.5	471.5	6.4	109
08KH10-32	2607	46984	1.1	21.0087	4.5	0.0492	6.6	0.0075	4.8	0.73	48.1	2.3	48.7	3.1	79.4	107.2	48.1	2.3	NA
08KH10-34	177	33715	1.7	12.7552	1.6	2.0754	2.8	0.192	2.3	0.82	1132.2	24	1140.7	19.4	1157	32.4	1157	32.4	97.9
08KH10-35	381	50832	1	17.6873	2.5	0.6111	4.3	0.0784	3.4	0.81	486.5	16.2	484.2	16.4	473.5	55.4	486.5	16.2	102.7
08KH10-36	89	20786	1	18.2329	12.6	0.5669	12.8	0.075	2.1	0.17	466	9.6	456	47.1	405.9	283.7	466	9.6	114.8
08KH10-37	1367	6043	6.3	18.6324	18.6	0.0394	19.4	0.0053	5.4	0.28	34.3	1.8	39.3	7.5	357.2	424	34.3	1.8	NA
08KH10-38	1072	6113	2.6	19.2662	6.9	0.06	8	0.0084	4.1	0.51	53.8	2.2	59.2	4.6	281.2	157.9	53.8	2.2	NA
08KH10-39	150	38281	1.7	14.2512	3.8	1.2735	5.9	0.1316	4.5	0.76	797.2	33.5	834	33.4	933.3	78	797.2	33.5	85.4
08KH10-40	206	39200	1.3	18.333	3.6	0.578	4.8	0.0769	3.2	0.66	477.3	14.6	463.2	17.9	393.7	81.4	477.3	14.6	121.3
08KH10-41	232	6140	1.8	19.9867	36.5	0.0591	37.7	0.0086	9.6	0.25	55	5.2	58.3	21.4	196.6	874	55	5.2	NA
08KH10-42	1712	187567	1.2	17.6556	0.6	0.5149	18.7	0.0659	18.7	1	411.6	74.5	421.7	64.6	477.5	13.9	411.6	74.5	86.2
08KH10-43	933	106961	1.7	17.6794	1.2	0.5823	2.4	0.0747	2.1	0.87	464.2	9.3	465.9	8.8	474.5	25.5	464.2	9.3	97.8
08KH10-44	291	1712	0.8	11.9975	87.6	0.0663	93.4	0.0058	32.5	0.35	37.1	12	65.1	59	1277.4	43.3	37.1	12	NA
08KH10-45	265	2984	1.9	20.0399	16.2	0.0507	17.7	0.0074	7.1	0.4	47.3	3.4	50.2	8.7	190.4	378.7	47.3	3.4	NA
08KH10-46	651	112604	1.3	17.6569	1.5	0.6011	2.1	0.077	1.4	0.7	478.1	6.7	477.9	7.9	477.3	32.6	478.1	6.7	100.2
08KH10-48	590	19880	1.1	17.6934	1.8	0.5849	5.5	0.0751	5.2	0.95	466.6	23.6	467.6	20.7	472.8	39.2	466.6	23.6	98.7

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios: 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma): 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH10-49	216	35644	0.7	16.7984	2.6	0.7718	4.5	0.094	3.7	0.82	579.4	20.4	580.8	20	586.5	56.9	579.4	20.4	98.8
08KH10-50	62	25729	0.4	12.4181	4.6	2.1589	10.4	0.1944	9.3	0.9	1145.4	97.8	1167.9	72.3	1210	90.9	1210	90.9	94.7
08KH10-51	3803	30570	0.7	20.8048	3.2	0.0336	4	0.0051	2.4	0.6	32.6	0.8	33.5	1.3	102.5	75.7	32.6	0.8	NA
08KH10-52	262	4424	1.5	24.6552	42.8	0.0412	43.2	0.0074	5.9	0.14	47.3	2.8	41	17.4	-315.2	1143.3	47.3	2.8	NA
08KH10-53	537	9102	0.9	21.3736	14.7	0.0472	15	0.0073	2.8	0.19	47	1.3	46.8	6.9	38.3	354	47	1.3	NA
08KH10-54	554	9099	0.7	22.9316	14.6	0.0455	15	0.0076	3.2	0.21	48.6	1.5	45.2	6.6	-132.8	363.1	48.6	1.5	NA
08KH10-55	2204	29874	4.8	21.6443	4.8	0.0483	5.7	0.0076	3.1	0.54	48.7	1.5	47.9	2.7	8.1	116	48.7	1.5	NA
08KH10-56	224	88	2.5	6.0053	82.7	0.1696	91.2	0.0074	38.5	0.42	47.4	18.2	159.1	135.1	2522.9	725	47.4	18.2	NA
08KH10-57	432	8107	1.6	24.3148	19.3	0.0425	19.9	0.0075	4.7	0.24	48.1	2.3	42.2	8.2	-279.7	494.9	48.1	2.3	NA
08KH10-58	351	45158	1.5	17.3942	1.6	0.5949	3.2	0.075	2.8	0.86	466.5	12.5	474	12.2	510.4	35.6	466.5	12.5	91.4
08KH10-59	192	41049	1.4	17.3085	4.2	0.6063	4.5	0.0761	1.5	0.34	472.9	6.9	481.2	17.3	521.2	93.2	472.9	6.9	90.7
08KH10-60	471	8561	1.2	23.0212	24.9	0.0454	25.3	0.0076	4	0.16	48.6	2	45	11.1	-142.4	625.9	48.6	2	NA
08KH10-61	1414	33150	1.7	21.6662	11.1	0.049	11.5	0.0077	2.9	0.25	49.5	1.4	48.6	5.4	5.7	268.1	49.5	1.4	NA
08KH10-62	477	7780	0.9	17.6238	1.6	0.5599	3	0.0716	2.5	0.84	445.6	10.8	451.5	10.9	481.5	35.9	445.6	10.8	92.5
08KH10-63	400	37981	1	17.7497	2.3	0.5778	2.9	0.0744	1.9	0.63	462.5	8.3	463	10.9	465.8	50.2	462.5	8.3	99.3
08KH10-64	503	17083	1.8	19.9776	11.2	0.0528	11.8	0.0076	3.6	0.3	49.1	1.7	52.2	6	197.6	261.6	49.1	1.7	NA
08KH10-65	233	24174	1.3	16.9529	4.7	0.6217	7.4	0.0764	5.7	0.77	474.8	26	490.9	28.6	566.6	102	474.8	26	83.8
08KH10-66	220	2922	0.8	3.8886	637	0.177	637	0.005	13.2	0.02	32.1	4.2	165.5	1951	3229.4	358.3	32.1	4.2	NA
08KH10-67	422	45490	1	17.5555	2.3	0.5838	4.4	0.0743	3.7	0.85	462.2	16.7	466.9	16.4	490.1	50.4	462.2	16.7	94.3
08KH10-68	518	73875	2.8	17.485	2.4	0.537	5.4	0.0681	4.8	0.89	424.7	19.7	436.5	19	498.9	52.8	424.7	19.7	85.1
08KH10-69	966	58925	2.2	17.6072	1.3	0.5524	3.9	0.0705	3.6	0.94	439.4	15.4	446.5	14	483.6	29.3	439.4	15.4	90.9
08KH10-70	362	88022	1.1	17.4369	2.1	0.622	5	0.0787	4.5	0.91	488.1	21.2	491.1	19.4	505	46.5	488.1	21.2	96.7

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH10-71	577	10649	1.4	21.1283	19.1	0.0494	20	0.0076	5.8	0.29	48.6	2.8	48.9	9.6	65.9	459.2	48.6	2.8	NA
08KH10-72	206	1748	1.6	13.4172	24.6	0.0765	26.5	0.0074	9.9	0.37	47.8	4.7	74.9	19.1	1055.9	502.8	47.8	4.7	NA
08KH10-73	1045	34393	1.4	23.7246	18.1	0.0339	18.4	0.0058	3.1	0.17	37.4	1.1	33.8	6.1	-217.5	458.9	37.4	1.1	NA
08KH10-74	119	4023	0.5	15.9736	11.7	0.6476	12.1	0.075	2.9	0.24	466.4	13.1	507	48.2	694.8	250.5	466.4	13.1	67.1
08KH10-75	187	52671	0.9	16.9753	4.4	0.6191	5	0.0762	2.2	0.45	473.5	10.2	489.3	19.3	563.7	96.6	473.5	10.2	84
08KH10-76	85	1410	1.6	8.8452	161	0.1138	162.9	0.0073	26.4	0.16	46.9	12.3	109.4	170.5	1849.1	73.3	46.9	12.3	NA
08KH10-77	1075	18054	2.2	20.9193	9.8	0.0485	10.4	0.0074	3.7	0.35	47.3	1.7	48.1	4.9	89.5	232.2	47.3	1.7	NA
08KH10-78	419	626	0.6	13.5418	41	0.0457	43.5	0.0045	14.5	0.33	28.9	4.2	45.4	19.3	1037.2	864.9	28.9	4.2	NA
08KH10-79	741	8651	2.4	19.5639	22.8	0.0433	23	0.0061	3.2	0.14	39.5	1.2	43	9.7	246	530.5	39.5	1.2	NA
08KH10-80	417	17392	4.7	22.9453	19.3	0.0553	19.7	0.0092	3.5	0.18	59.1	2.1	54.7	10.5	-134.2	482.3	59.1	2.1	NA
08KH10-81	1328	10022	20	23.5178	11.9	0.0277	13.9	0.0047	7.2	0.51	30.4	2.2	27.8	3.8	-195.6	299.1	30.4	2.2	NA
08KH10-82	227	25892	1.2	17.4713	3.9	0.5227	5.7	0.0662	4.1	0.72	413.4	16.3	426.9	19.7	500.7	86.2	413.4	16.3	82.6
08KH10-83	269	89370	1.1	17.6949	3.2	0.6193	5.8	0.0795	4.8	0.83	493	22.7	489.4	22.5	472.6	71.8	493	22.7	104.3
08KH10-84	1482	112683	1.7	17.631	0.6	0.5665	3.2	0.0724	3.2	0.98	450.8	13.8	455.7	11.8	480.6	12.7	450.8	13.8	93.8
08KH10-85	424	39271	0.8	17.641	1.8	0.6131	4.1	0.0784	3.6	0.89	486.8	17	485.5	15.7	479.3	40.3	486.8	17	101.6
08KH10-86	172	21257	0.7	17.1011	7.4	0.5975	7.6	0.0741	1.6	0.21	460.8	7.1	475.6	28.8	547.6	162.3	460.8	7.1	84.2
08KH10-87	4632	41507	13.6	20.5531	3.3	0.0321	4.5	0.0048	3	0.68	30.8	0.9	32.1	1.4	131.2	77.5	30.8	0.9	NA
08KH10-88	699	6868	1	23.9757	18.3	0.0278	19.5	0.0048	6.9	0.36	31.1	2.2	27.9	5.4	-244.1	464.5	31.1	2.2	NA
08KH10-90	492	3740	0.7	22.6861	35.8	0.0289	36.4	0.0048	6.7	0.18	30.6	2	28.9	10.4	-106.2	906.3	30.6	2	NA
08KH10-91	240	3934	0.6	3.1851	846	0.2047	845.6	0.0047	11.1	0.01	30.4	3.4	189.1	#####	3540.5	428.8	30.4	3.4	NA
08KH10-92	778	60682	1.2	17.5247	1.4	0.6088	2.4	0.0774	2	0.83	480.5	9.3	482.8	9.3	493.9	29.8	480.5	9.3	97.3
08KH10-93	137	2104	1.4	9.538	262	0.1081	262.1	0.0075	17.1	0.07	48	8.2	104.2	265.4	1711.6	632	48	8.2	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma) 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH10-94	692	5158	1.5	21.9269	19.1	0.0491	19.2	0.0078	2.4	0.12	50.2	1.2	48.7	9.1	-23.1	465.6	50.2	1.2	NA
08KH10-95	313	45184	1	17.5131	3.4	0.5972	5.3	0.0758	4.1	0.77	471.3	18.6	475.4	20.2	495.4	75.2	471.3	18.6	95.1
08KH10-97	581	5304	2.4	20.491	38	0.035	38.2	0.0052	3.9	0.1	33.5	1.3	35	13.1	138.3	922.5	33.5	1.3	NA
08KH10-99	124	3284	0.8	17.0435	8	0.5736	8.7	0.0709	3.4	0.39	441.6	14.7	460.3	32.2	555	174.5	441.6	14.7	79.6
08KH10-100	826	19539	2.1	20.6826	9.6	0.0503	10.7	0.0076	4.8	0.45	48.5	2.3	49.9	5.2	116.4	225.7	48.5	2.3	NA
08KH10-101	527	4836	0.8	25.0925	16.8	0.0317	18	0.0058	6.3	0.35	37.1	2.3	31.7	5.6	-360.5	437.6	37.1	2.3	NA
08KH10-102	379	726	2.4	22.237	74.4	0.0384	74.7	0.0062	6.4	0.09	39.8	2.5	38.2	28.1	-57.3	2133.3	39.8	2.5	NA
08KH10-103	794	13255	1	22.2388	17.1	0.0335	17.7	0.0054	4.6	0.26	34.7	1.6	33.4	5.8	-57.5	420.2	34.7	1.6	NA
08KH10-104	230	15886	0.9	17.9657	6.5	0.5674	14	0.0739	12.4	0.89	459.8	55	456.3	51.5	438.9	145.2	459.8	55	104.8
08KH10-105	866	8336	0.4	24.6856	27.9	0.0308	28.2	0.0055	3.8	0.13	35.4	1.3	30.8	8.5	-318.4	728.6	35.4	1.3	NA
08KH10-106	354	3810	2.2	17.1611	45	0.0513	51.5	0.0064	24.9	0.48	41	10.2	50.8	25.5	540	1035.3	41	10.2	NA
08KH10-107	165	4865	1.7	22.9298	78.1	0.0472	78.6	0.0079	8.3	0.11	50.4	4.2	46.9	36	-132.6	2327.4	50.4	4.2	NA
08KH10-108	1281	32021	3.6	21.6218	6.6	0.0479	6.9	0.0075	2.1	0.3	48.3	1	47.5	3.2	10.7	159.3	48.3	1	NA
08KH10-109	295	68314	1.1	17.2406	2.7	0.63	3.9	0.0788	2.9	0.73	488.8	13.4	496.1	15.4	529.9	58.7	488.8	13.4	92.3
08KH10-110	861	6190	0.9	18.7244	9.3	0.0353	10.4	0.0048	4.7	0.46	30.8	1.5	35.2	3.6	346.1	209.8	30.8	1.5	NA
08KH10-111	760	18684	1	21.3595	12.5	0.0465	13.4	0.0072	4.7	0.35	46.2	2.1	46.1	6	40	300.4	46.2	2.1	NA
08KH10-112	154	82103	2.2	10.0778	1.4	3.6827	2.4	0.2692	2	0.83	1536.6	27.6	1567.6	19.5	1609.6	25.8	1609.6	25.8	95.5
08KH10-113	278	67645	1	17.8729	4.6	0.5443	5.8	0.0705	3.6	0.62	439.5	15.3	441.2	20.8	450.4	101.6	439.5	15.3	97.6
08KH10-114	172	1927	1.2	16.1506	11.4	0.6235	11.7	0.073	2.7	0.23	454.4	11.9	492	45.8	671.2	245	454.4	11.9	67.7
08KH10-115	433	119718	1.4	17.632	2	0.5867	3.6	0.075	2.9	0.83	466.4	13.2	468.8	13.3	480.4	44.2	466.4	13.2	97.1
08KH10-117	289	5424	1.4	22.1419	29.2	0.0477	30.1	0.0077	7.1	0.24	49.2	3.5	47.3	13.9	-46.8	724	49.2	3.5	NA
08KH10-118	703	6140	0.7	20.8435	27.1	0.0326	28	0.0049	7.2	0.26	31.7	2.3	32.6	9	98.1	651.3	31.7	2.3	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma) 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH10-119	810	12301	2	24.1464	10.9	0.0425	11.2	0.0074	2.2	0.2	47.8	1.1	42.3	4.6	-262	277.9	47.8	1.1	NA
08KH10-120	1983	16047	37.7	19.4111	2.6	0.066	8.4	0.0093	8	0.95	59.6	4.8	64.9	5.3	264	58.8	59.6	4.8	NA
08KH10-1 b	575	1984	0.8	16.3987	24.2	0.068	24.5	0.0081	4.2	0.17	51.9	2.2	66.8	15.9	638.6	526.8	51.9	2.2	NA
08KH10-2 b	951	15584	59.1	20.9132	23.4	0.0321	23.6	0.0049	2.7	0.12	31.3	0.9	32.1	7.4	90.2	561.1	31.3	0.9	NA
08KH10-3 b	698	22910	4.1	20.7877	3.7	0.0945	13.8	0.0142	13.3	0.96	91.2	12.1	91.7	12.1	104.4	87.5	91.2	12.1	NA
08KH10-4 b	697	31776	1.2	21.6429	8.4	0.0494	9.2	0.0078	3.8	0.41	49.8	1.9	49	4.4	8.3	201.6	49.8	1.9	NA
08KH10-5 b	1566	70087	11.2	21.9148	5	0.0446	5.1	0.0071	1.2	0.23	45.5	0.5	44.3	2.2	-21.8	120.8	45.5	0.5	NA
08KH10-6 b	478	12849	1.5	20.3653	13.1	0.0513	13.5	0.0076	3	0.22	48.7	1.5	50.8	6.7	152.8	309	48.7	1.5	NA
08KH10-7 b	4167	16794	0.7	17.3172	2.5	0.1904	84	0.0239	84	1	152.3	126.4	177	137.3	520.1	55.5	152.3	126.4	NA
08KH10-8 b	120	28631	0.6	17.622	8.1	0.601	8.6	0.0768	2.8	0.32	477.1	12.8	477.9	32.8	481.7	180.1	477.1	12.8	99
08KH10-9 b	1626	18090	1.2	20.7488	5.6	0.0603	7.5	0.0091	5	0.67	58.3	2.9	59.5	4.3	108.9	131.8	58.3	2.9	NA
08KH10-10 b	148	123245	3.1	11.6035	1.4	2.4566	3	0.2067	2.6	0.88	1211.4	28.8	1259.4	21.4	1342.2	27.5	1342.2	27.5	90.3
08KH10-11 b	352	9309	2.5	25.2012	16.8	0.0466	17.2	0.0085	3.9	0.23	54.7	2.1	46.3	7.8	-371.7	436.9	54.7	2.1	NA
08KH10-12 b	905	10329	25.5	22.9889	14.2	0.0299	15	0.005	4.9	0.32	32.1	1.6	29.9	4.4	-138.9	352.7	32.1	1.6	NA
08KH10-14 b	196	4056	0.9	19.6078	36.2	0.0528	37	0.0075	7.4	0.2	48.2	3.6	52.3	18.8	240.8	861.2	48.2	3.6	NA
08KH10-15 b	1283	40159	1.6	22.1238	5.8	0.0467	6.2	0.0075	2.4	0.38	48.1	1.1	46.3	2.8	-44.8	140.5	48.1	1.1	NA
08KH10-16 b	1204	27928	1	20.1534	4.3	0.0521	4.5	0.0076	1.2	0.26	48.9	0.6	51.5	2.2	177.2	100.6	48.9	0.6	NA
08KH10-17 b	538	103222	0.9	17.5156	1.5	0.6094	2.1	0.0774	1.4	0.7	480.7	6.7	483.2	8	495.1	33	480.7	6.7	97.1
08KH10-18 b	1038	47360	0.6	17.4398	0.8	0.5408	17.2	0.0684	17.2	1	426.6	71.1	439	61.5	504.7	17.7	426.6	71.1	84.5
08KH10-19 b	438	101851	1.5	17.5523	2	0.5457	2.6	0.0695	1.7	0.65	433	7.2	442.2	9.4	490.5	44.1	433	7.2	88.3
08KH10-20 b	447	4968	6.5	25.0398	27.8	0.0423	27.9	0.0077	2.5	0.09	49.3	1.2	42	11.5	-355	730.9	49.3	1.2	NA
08KH10-21 b	2225	41499	20.8	22.2156	6.8	0.0329	6.9	0.0053	1.4	0.2	34	0.5	32.8	2.2	-54.9	164.7	34	0.5	NA
08KH10-22 b	5190	17080	18.9	21.1911	2	0.0445	16.8	0.0068	16.7	0.99	43.9	7.3	44.2	7.3	58.9	46.6	43.9	7.3	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma) 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH10-23 b	869	15359	1.6	21.492	12.4	0.0471	12.5	0.0073	1.7	0.14	47.2	0.8	46.8	5.7	25.1	298.1	47.2	0.8	NA
08KH10-24 b	1445	43562	3.2	23.2495	7.6	0.0328	9.5	0.0055	5.6	0.59	35.6	2	32.8	3.1	-166.9	190.2	35.6	2	NA
08KH10-25 b	1778	59214	14.6	21.0055	3.2	0.0466	4	0.0071	2.4	0.59	45.6	1.1	46.3	1.8	79.7	76.6	45.6	1.1	NA
08KH10-26 b	2385	1037323	16.6	15.1012	0.3	1.1345	3.4	0.1243	3.3	0.99	755	23.8	769.9	18.1	813.4	7.1	755	23.8	92.8
08KH10-27 b	347	45654	2.4	20.4266	6.2	0.1814	6.5	0.0269	1.7	0.27	170.9	2.9	169.2	10.1	145.7	146.5	170.9	2.9	NA
08KH10-28 b	775	11596	3.1	23.3508	20.8	0.0288	21	0.0049	2.6	0.12	31.4	0.8	28.9	6	-177.7	523.5	31.4	0.8	NA
08KH10-29 b	88	39505	1.8	10.4111	1.4	2.9811	2.7	0.2251	2.4	0.86	1308.7	27.9	1402.8	20.8	1548.8	26.1	1548.8	26.1	84.5
08KH10-30 b	266	2538	1.3	25.2827	48.4	0.0269	49.7	0.0049	11.2	0.23	31.8	3.6	27	13.2	-380.1	1325.7	31.8	3.6	NA
08KH10-31 b	296	1726	1.9	21.7366	26.9	0.0474	27.4	0.0075	5.6	0.2	48	2.7	47	12.6	-2.1	658.1	48	2.7	NA
08KH10-32 b	531	177779	1.1	17.5352	0.8	0.5961	1.8	0.0758	1.7	0.91	471.1	7.6	474.8	7	492.6	16.8	471.1	7.6	95.6
08KH10-33 b	368	83506	1.3	17.5186	1.8	0.5953	2.2	0.0756	1.2	0.55	470	5.6	474.3	8.4	494.7	40.6	470	5.6	95
08KH10-34 b	885	11253	0.3	21.7459	14.7	0.0306	15.2	0.0048	3.8	0.25	31	1.2	30.6	4.6	-3.1	356.9	31	1.2	NA
08KH10-35 b	190	2651	0.5	16.5808	171	0.0395	171.4	0.0047	11.9	0.07	30.5	3.6	39.3	66.2	614.7	1095.8	30.5	3.6	NA
08KH10-36 b	307	6800	2.7	31.0666	40.6	0.0314	40.9	0.0071	5	0.12	45.4	2.3	31.4	12.6	-947.6	1229.1	45.4	2.3	NA
08KH10-37 b	116	20991	0.6	18.1714	5.5	0.5779	5.8	0.0762	1.9	0.32	473.2	8.5	463.1	21.5	413.5	122.5	473.2	8.5	114.4
08KH10-38 b	2477	46605	2.5	21.2151	4.1	0.0322	4.4	0.005	1.6	0.36	31.8	0.5	32.2	1.4	56.2	98.7	31.8	0.5	NA
08KH10-39 b	350	9281	1.5	19.0908	14.2	0.0534	15.1	0.0074	5.2	0.34	47.5	2.4	52.8	7.8	302.1	325.9	47.5	2.4	NA
08KH10-40 b	2177	119914	3.5	17.5429	0.3	0.5541	3.1	0.0705	3.1	0.99	439.2	13.2	447.7	11.3	491.7	7.2	439.2	13.2	89.3
08KH10-41 b	1072	13712	7.8	22.1848	10.6	0.0309	10.9	0.005	2.1	0.19	31.9	0.7	30.9	3.3	-51.5	259.8	31.9	0.7	NA
08KH10-42 b	517	10832	2.7	23.9665	11.7	0.0425	11.8	0.0074	1.9	0.16	47.5	0.9	42.3	4.9	-243.1	296.1	47.5	0.9	NA
08KH10-44 b	1280	34932	3.3	21.442	10.6	0.0352	10.7	0.0055	1.5	0.14	35.2	0.5	35.1	3.7	30.7	254	35.2	0.5	NA
08KH10-45 b	625	111314	6.7	14.8901	0.8	0.5031	5.8	0.0543	5.7	0.99	341.1	18.9	413.8	19.6	842.7	17.3	341.1	18.9	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @6)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
		204Pb		206Pb* / 207Pb*	± (%)	207Pb* / 235U*	± (%)	206Pb* / 238U	± (%)		206Pb* / 238U*	± (Ma)	207Pb* / 235U	± (Ma)	206Pb* / 207Pb*	± (Ma)			
08KH10-46 b	175	4691	1.2	20.7205	46.1	0.057	47.5	0.0086	11.2	0.24	55	6.1	56.3	26	112.1	1144.9	55	6.1	NA
08KH10-47 b	1599	166101	0.7	17.4795	0.7	0.5598	2.1	0.071	2	0.94	442	8.4	451.4	7.6	499.6	15.2	442	8.4	88.5
08KH10-48 b	3003	47909	2.2	20.7631	2.3	0.0511	2.5	0.0077	1	0.39	49.4	0.5	50.6	1.2	107.3	53.6	49.4	0.5	NA
08KH10-49 b	1549	21674	6.9	20.6236	6.8	0.0317	7.4	0.0047	2.9	0.39	30.5	0.9	31.7	2.3	123.1	160.6	30.5	0.9	NA
08KH10-50 b	2757	37310	0.5	20.6213	3.8	0.0341	4.2	0.0051	1.8	0.44	32.8	0.6	34.1	1.4	123.4	89.1	32.8	0.6	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @ 10)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma) 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH31-1	102	11869	1.8	10.6682	2.5	2.4035	4.3	0.186	3.5	0.82	1099.5	35.3	1243.7	30.7	1502.8	46.8	1502.8	46.8	73.2
08KH31-2	169	31006	0.8	17.2612	5.8	0.6449	7.8	0.0807	5.1	0.66	500.5	24.7	505.3	31	527.3	128.1	500.5	24.7	94.9
08KH31-3	1263	325029	1.7	17.5685	0.7	0.6078	2	0.0774	1.8	0.94	480.9	8.5	482.2	7.5	488.4	15.2	480.9	8.5	98.5
08KH31-4	167	32999	0.9	17.6713	4.7	0.6099	5.2	0.0782	2.2	0.41	485.2	10.1	483.5	20	475.5	104.8	485.2	10.1	102
08KH31-5	628	190715	8	14.5372	0.8	1.1702	2.2	0.1234	2	0.94	750	14.4	786.7	11.9	892.4	15.8	750	14.4	84
08KH31-6	210	115088	0.9	12.7604	1.3	2.0441	1.8	0.1892	1.2	0.67	1116.9	12.1	1130.3	12.1	1156.2	26.3	1156.2	26.3	96.6
08KH31-7	121	30162	0.8	12.6804	2.7	2.1469	3.2	0.1974	1.6	0.51	1161.6	17.1	1164	22	1168.6	54.1	1168.6	54.1	99.4
08KH31-8	106	28461	0.4	12.7884	2.1	2.0197	2.5	0.1873	1.3	0.51	1106.9	12.8	1122.2	16.8	1151.8	42.3	1151.8	42.3	96.1
08KH31-9	338	8257	1.7	23.3822	21.7	0.0652	22.9	0.0111	7.5	0.33	70.9	5.3	64.1	14.2	-181.1	546.2	70.9	5.3	NA
08KH31-10	613	133889	1.9	10.5705	0.5	2.5999	4.6	0.1993	4.5	0.99	1171.6	48.6	1300.6	33.5	1520.2	10	1520.2	10	77.1
08KH31-11	157	16583	1.2	17.2135	5.3	0.6303	5.5	0.0787	1.5	0.27	488.3	6.9	496.3	21.6	533.3	116.5	488.3	6.9	91.6
08KH31-12	389	55011	0.7	17.6917	2.1	0.5971	2.9	0.0766	2	0.69	475.9	9	475.4	10.9	473	46.1	475.9	9	100.6
08KH31-13	153	65132	4.6	12.7164	1.6	2.1299	1.8	0.1964	0.9	0.51	1156.1	9.9	1158.6	12.7	1163	31.4	1163	31.4	99.4
08KH31-14	421	79598	6.1	17.41	1.8	0.6176	2.4	0.078	1.6	0.67	484	7.6	488.3	9.4	508.4	39.6	484	7.6	95.2
08KH31-15	62	67249	0.5	10.2761	3.5	3.1669	13.2	0.236	12.7	0.96	1366	156.3	1449.1	101.9	1573.2	65.3	1573.2	65.3	86.8
08KH31-16	404	27261	2.4	13.2328	0.8	1.6198	1.2	0.1555	0.9	0.75	931.5	7.8	977.9	7.6	1083.7	16	1083.7	16	86
08KH31-17	240	9752	1.1	21.3147	19.3	0.173	19.4	0.0267	1.7	0.09	170.1	2.9	162	29.1	44.9	465.5	170.1	2.9	NA
08KH31-18	422	85429	4.6	12.6487	1	1.9724	1.7	0.1809	1.4	0.8	1072.1	13.6	1106.1	11.6	1173.6	20.6	1173.6	20.6	91.4
08KH31-19	466	23489	1.2	14.519	1.5	1.1139	12.6	0.1173	12.5	0.99	715	84.8	760	67.6	895	31.1	715	84.8	79.9
08KH31-20	52	5319	1	14.0668	4.7	1.529	6	0.156	3.6	0.61	934.5	31.4	942.1	36.5	960	96.7	934.5	31.4	97.3
08KH31-21	285	7197	0.6	27.1593	32.3	0.0581	32.6	0.0115	4.1	0.13	73.4	3	57.4	18.2	-569.7	891.8	73.4	3	NA
08KH31-22	211	108828	1.8	9.8819	1.9	3.2464	4.2	0.2327	3.8	0.89	1348.5	46.1	1468.3	32.9	1646.1	35.4	1646.1	35.4	81.9
08KH31-23	429	9085	1.3	22.6268	25.5	0.0701	25.7	0.0115	3.3	0.13	73.7	2.4	68.8	17.1	-99.8	635.2	73.7	2.4	NA
08KH31-24	187	4100	1.3	22.9822	49.5	0.0433	50.4	0.0072	9.6	0.19	46.3	4.4	43	21.2	-138.2	1297.8	46.3	4.4	NA
08KH31-25	2558	63802	0.8	21.2261	2.5	0.077	3.1	0.0119	1.7	0.56	76	1.3	75.3	2.2	54.9	60.8	76	1.3	NA
08KH31-26	279	48545	1.3	17.6359	1.9	0.5922	4.4	0.0757	4	0.9	470.7	18.2	472.3	16.8	480	42.3	470.7	18.2	98.1

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @ 10)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH31-27	497	15297	0.9	22.1659	12.7	0.0726	12.8	0.0117	1.7	0.13	74.8	1.2	71.2	8.8	-49.5	309	74.8	1.2	NA
08KH31-28	140	63113	1.6	13.5824	2	1.735	2.3	0.1709	1.2	0.51	1017.1	11.1	1021.6	15	1031.2	40.6	1031.2	40.6	98.6
08KH31-29	275	19695	1.3	17.0189	5.6	0.5841	21.2	0.0721	20.5	0.96	448.8	88.8	467.1	79.7	558.2	122.6	448.8	88.8	80.4
08KH31-30	315	47027	1	13.6668	1.3	1.5819	4.7	0.1568	4.6	0.96	939	39.9	963.1	29.5	1018.6	26.3	939	39.9	92.2
08KH31-31	224	125478	2.3	13.634	1.6	1.6539	2.1	0.1635	1.3	0.64	976.4	12	991	13.2	1023.5	32.5	976.4	12	95.4
08KH31-32	2063	87047	2.4	21.1027	4.5	0.0742	5.2	0.0114	2.6	0.5	72.8	1.9	72.6	3.6	68.8	106.4	72.8	1.9	NA
08KH31-33	40	23546	1.6	10.2273	3.1	3.6059	3.9	0.2675	2.3	0.58	1527.9	30.9	1550.8	30.8	1582.2	58.9	1582.2	58.9	96.6
08KH31-34	466	13527	0.9	19.0583	11.2	0.0865	11.6	0.012	2.9	0.25	76.6	2.2	84.2	9.4	306	256.9	76.6	2.2	NA
08KH31-35	263	8826	3.4	22.1956	17.6	0.0869	27.2	0.014	20.7	0.76	89.6	18.4	84.6	22.1	-52.7	432.4	89.6	18.4	NA
08KH31-36	94	17046	1.9	16.1478	7.7	0.8557	10.2	0.1002	6.8	0.66	615.7	39.9	627.8	48	671.6	164	615.7	39.9	91.7
08KH31-37	116	60735	0.9	12.322	1.2	2.3355	3.9	0.2087	3.7	0.95	1222	41.4	1223.2	27.8	1225.2	23.7	1225.2	23.7	99.7
08KH31-38	168	81305	1.8	13.0199	1.5	1.9583	2.2	0.1849	1.6	0.72	1093.8	15.6	1101.3	14.6	1116.2	30.2	1116.2	30.2	98
08KH31-39	775	18181	1.4	21.4372	6.1	0.0748	6.6	0.0116	2.4	0.37	74.5	1.8	73.2	4.6	31.2	146	74.5	1.8	NA
08KH31-40	299	7604	1.2	22.8271	16.8	0.1064	17.1	0.0176	3.3	0.19	112.5	3.7	102.6	16.7	-121.5	416.6	112.5	3.7	NA
08KH31-41	511	13443	1	20.3223	11.8	0.0785	12.1	0.0116	2.4	0.2	74.1	1.8	76.7	8.9	157.7	277.6	74.1	1.8	NA
08KH31-42	791	23855	1.3	20.1355	4.8	0.1227	5.2	0.0179	2	0.38	114.5	2.3	117.5	5.8	179.2	112.7	114.5	2.3	NA
08KH31-43	795	20509	1.9	18.0798	5.7	0.0989	9.6	0.013	7.8	0.8	83.1	6.4	95.8	8.8	424.8	127.9	83.1	6.4	NA
08KH31-44	395	8611	5.4	51.187	91.7	0.0178	91.9	0.0066	5.4	0.06	42.5	2.3	17.9	16.3	NA	NA	42.5	2.3	NA
08KH31-45	3591	74674	4.6	21.473	4	0.0489	4.3	0.0076	1.7	0.39	48.9	0.8	48.5	2.1	27.3	95.9	48.9	0.8	NA
08KH31-46	539	201134	3.3	16.9615	1.4	0.7406	2.3	0.0911	1.8	0.8	562.1	9.9	562.8	9.8	565.5	29.6	562.1	9.9	99.4
08KH31-46	78	16659	0.5	12.822	2.5	2.0427	6.3	0.19	5.8	0.92	1121.1	59.6	1129.9	43.2	1146.6	50.6	1146.6	50.6	97.8
08KH31-47	283	188458	1.4	9.8851	0.6	3.7651	2.5	0.2699	2.4	0.96	1540.5	32.5	1585.3	19.8	1645.5	12	1645.5	12	93.6
08KH31-49	416	170259	1.5	13.4758	1.1	1.7082	1.6	0.1669	1.2	0.75	995.3	11.1	1011.6	10.2	1047.1	21.2	1047.1	21.2	95
08KH31-50	433	72632	1.2	12.6286	1.2	2.0641	4.7	0.1891	4.5	0.97	1116.3	46.5	1137	32.1	1176.8	23.8	1176.8	23.8	94.9
08KH31-51	141	87504	1.2	10.2844	1	3.7139	1.8	0.277	1.5	0.83	1576.3	20.4	1574.4	14.1	1571.7	18.7	1571.7	18.7	100.3
08KH31-52	344	142172	0.8	12.6472	0.6	2.1051	1.7	0.1931	1.6	0.93	1138.1	16.8	1150.5	11.9	1173.9	12.3	1173.9	12.3	97

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @ 10)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±		206Pb*	±	207Pb*	±	206Pb*	±			
		204Pb		207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
08KH31-53	377	5572	1.2	22.3083	47.6	0.0519	47.8	0.0084	4.2	0.09	53.9	2.3	51.4	23.9	-65.1	1224	53.9	2.3	NA
08KH31-54	143	4730	1.2	29.1469	34.4	0.0922	35	0.0195	6.3	0.18	124.5	7.7	89.6	30	-764.4	992.1	124.5	7.7	NA
08KH31-55	55	1110	0.7	17.2579	103	0.1059	104	0.0133	16.7	0.16	84.9	14	102.2	101.4	527.7	654.2	84.9	14	NA
08KH31-56	121	15969	2.2	17.3355	10.9	0.7015	14.2	0.0882	9.1	0.64	544.9	47.6	539.7	59.7	517.8	241	544.9	47.6	105.2
08KH31-57	264	156917	2.2	14.2271	1.8	1.3879	3.5	0.1432	3	0.86	862.8	24.1	883.8	20.6	936.8	36.8	862.8	24.1	92.1
08KH31-59	328	50764	1.5	17.7977	2.4	0.5935	2.9	0.0766	1.6	0.55	475.8	7.2	473.1	10.8	459.8	53.1	475.8	7.2	103.5
08KH31-60	576	12517	2.8	11.0513	1.5	2.888	3.3	0.2315	3	0.89	1342.3	35.8	1378.8	25.1	1435.8	29.3	1435.8	29.3	93.5
08KH31-61	2274	36253	26.7	23.3232	12.9	0.023	13.5	0.0039	3.8	0.28	25	0.9	23.1	3.1	-174.8	323.3	25	0.9	NA
08KH31-62	186	50793	1.2	12.6995	0.9	2.1368	1.9	0.1968	1.6	0.88	1158.2	17.3	1160.8	12.9	1165.7	17.6	1165.7	17.6	99.4
08KH31-63	420	115355	0.9	17.462	2.1	0.7233	2.7	0.0916	1.7	0.62	565	9	552.6	11.5	501.8	46.8	565	9	112.6
08KH31-64	57	3122	1.1	-7.7601	267	-0.2058	267.7	0.0116	21.2	0.08	74.2	15.6	-233.9	-868	NA	NA	74.2	15.6	NA
08KH31-65	247	13682	1.4	12.6345	1.6	2.1102	3.3	0.1934	2.8	0.87	1139.6	29.6	1152.2	22.5	1175.9	32.3	1175.9	32.3	96.9
08KH31-66	43	17427	1	12.5066	8.2	2.2588	13.2	0.2049	10.3	0.78	1201.5	113.4	1199.5	93.2	1195.9	161.9	1195.9	161.9	100.5
08KH31-67	268	8424	1.3	21.444	13.1	0.0762	14	0.0118	4.9	0.35	75.9	3.7	74.6	10.1	30.5	315.6	75.9	3.7	NA
08KH31-68	354	5717	3.3	22.8718	26.2	0.0474	27.3	0.0079	7.8	0.28	50.5	3.9	47	12.6	-126.3	656.9	50.5	3.9	NA
08KH31-69	130	41466	1.5	9.8733	1.2	4.0359	1.7	0.289	1.2	0.69	1636.6	16.8	1641.5	13.6	1647.7	22.4	1647.7	22.4	99.3
08KH31-70	195	60685	1.1	10.3773	0.8	3.4204	3.9	0.2574	3.8	0.98	1476.7	49.8	1509.1	30.3	1554.9	15	1554.9	15	95
08KH31-71	38	8582	1.3	16.1853	21.4	0.7947	22.3	0.0933	6.1	0.27	575	33.5	593.8	100.5	666.6	463.9	575	33.5	86.2
08KH31-73	1248	40572	1.3	20.476	3.5	0.0814	9.3	0.0121	8.6	0.92	77.5	6.6	79.5	7.1	140.1	83.4	77.5	6.6	NA
08KH31-74	242	88675	1.5	17.6802	4.8	0.6211	5.7	0.0796	3	0.53	494	14.4	490.5	22.1	474.4	106.2	494	14.4	104.1
08KH31-75	240	46893	1.5	17.7609	2.2	0.6013	2.7	0.0775	1.6	0.59	480.9	7.5	478.1	10.4	464.4	48.8	480.9	7.5	103.6
08KH31-76	190	97078	0.9	9.8791	0.6	3.9793	4.8	0.2851	4.8	0.99	1617.1	68.3	1630	39	1646.7	10.2	1646.7	10.2	98.2
08KH31-77	147	44100	0.6	13.461	1.5	1.8956	2.8	0.1851	2.3	0.84	1094.6	23.6	1079.6	18.5	1049.3	30.2	1049.3	30.2	104.3
08KH31-78	426	5300	5.2	13.1864	4.3	1.4186	17.1	0.1357	16.6	0.97	820.1	127.7	896.8	102.3	1090.7	86.3	820.1	127.7	75.2
08KH31-79	815	2489	0.8	17.2514	4.2	0.5517	10.9	0.069	10	0.92	430.3	41.8	446.1	39.2	528.5	91.4	430.3	41.8	81.4
08KH31-81	111	2309	0.9	8.8421	158	0.1081	157.8	0.0069	7.1	0.05	44.5	3.2	104.3	157.6	1849.7	58.3	44.5	3.2	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @ 10)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH31-82	413	7232	1.3	23.1421	15.1	0.071	15.6	0.0119	4.1	0.26	76.4	3.1	69.7	10.5	-155.4	376.6	76.4	3.1	NA
08KH31-83	379	5854	6.2	27.8829	30	0.0403	30.4	0.0082	4.5	0.15	52.4	2.3	40.2	12	-641.2	838.9	52.4	2.3	NA
08KH31-84	509	17686	10.6	16.7279	5.6	0.2957	10.8	0.0359	9.3	0.86	227.2	20.8	263	25.1	595.6	120.4	227.2	20.8	NA
08KH31-85	93	50438	1.4	10.2307	1.3	3.7986	2.8	0.2819	2.5	0.88	1600.7	35.4	1592.5	22.7	1581.5	24.6	1581.5	24.6	101.2
08KH31-86	74	42694	1.3	11.3433	3.5	2.932	4.8	0.2412	3.3	0.69	1393	40.9	1390.2	36	1385.9	66.3	1385.9	66.3	100.5
08KH31-88	775	8064	2.5	12.3229	1.8	2.2139	2.5	0.1979	1.7	0.68	1163.8	17.9	1185.4	17.4	1225.1	36.1	1225.1	36.1	95
08KH31-89	537	105368	1.2	10.4372	0.4	2.5771	2.8	0.1951	2.8	0.99	1148.8	29.1	1294.2	20.4	1544.1	7	1544.1	7	74.4
08KH31-90	538	26090	7.8	15.5874	3.8	0.524	9.7	0.0592	8.9	0.92	371	32.2	427.8	33.9	746.7	79.9	371	32.2	NA
08KH31-92	902	13530	2.7	11.9801	1.1	2.1951	2.6	0.1907	2.4	0.9	1125.3	24.6	1179.5	18.4	1280.3	22.1	1280.3	22.1	87.9
08KH31-93	1003	9999	8.1	19.6888	2.2	0.2335	2.6	0.0333	1.2	0.48	211.4	2.6	213.1	4.9	231.3	51.9	211.4	2.6	NA
08KH31-95	223	57858	1.4	13.6285	1.2	1.7818	2.1	0.1761	1.7	0.81	1045.7	16.1	1038.8	13.5	1024.3	24.9	1024.3	24.9	102.1
08KH31-96	212	6163	0.8	23.8858	37.3	0.0509	37.5	0.0088	3.6	0.1	56.6	2.1	50.4	18.4	-234.6	969.7	56.6	2.1	NA
08KH31-97	371	201229	2.3	8.2413	0.3	4.7113	3	0.2816	3	0.99	1599.4	42.9	1769.2	25.5	1976	5.6	1976	5.6	80.9
08KH31-98	240	44196	2.1	16.0332	2.5	0.6181	6	0.0719	5.4	0.91	447.4	23.5	488.7	23.3	686.9	54.2	447.4	23.5	65.1
08KH31-99	2192	711168	39.3	9.9281	0.1	3.6955	1.5	0.2661	1.5	1	1520.9	19.9	1570.4	11.8	1637.5	1.2	1637.5	1.2	92.9
08KH31-100	582	13851	0.9	19.311	15.9	0.0835	16.2	0.0117	2.9	0.18	75	2.2	81.4	12.7	275.9	367.3	75	2.2	NA
08KH31-101	202	28608	6.6	16.0373	5	0.6458	6	0.0751	3.3	0.56	466.9	15	505.9	23.9	686.3	106.5	466.9	15	68
08KH31-102	271	35091	0.8	17.7538	3.6	0.5876	4.6	0.0757	2.9	0.62	470.2	13	469.3	17.4	465.2	80.4	470.2	13	101.1
08KH31-104	1120	10970	1.2	20.2761	9.8	0.0574	13.8	0.0084	9.7	0.71	54.1	5.3	56.6	7.6	163	229.1	54.1	5.3	NA
08KH31-105	322	63288	5.5	16.9448	2.3	0.7568	4	0.093	3.2	0.8	573.3	17.4	572.2	17.3	567.7	51.1	573.3	17.4	101
08KH31-106	63	123548	1.6	4.9022	0.6	15.334	1.6	0.5452	1.5	0.93	2805.1	34.8	2836.2	15.7	2858.4	9.8	2858.4	9.8	98.1
08KH31-107	1301	75126	30.7	20.2654	3.1	0.1511	5.6	0.0222	4.7	0.84	141.6	6.6	142.9	7.5	164.2	71.7	141.6	6.6	NA
08KH31-108	682	22103	4.3	14.4538	1.1	0.9302	6.7	0.0975	6.6	0.99	599.8	37.9	667.8	32.8	904.3	23.3	599.8	37.9	66.3
08KH31-109	485	412094	6	12.0914	1	2.2125	8.7	0.194	8.7	0.99	1143.1	90.7	1185	61	1262.2	18.9	1262.2	18.9	90.6

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 flood @ 10)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH31-110	1720	12401	2.9	21.0117	6.6	0.0504	6.9	0.0077	2.1	0.3	49.4	1	50	3.4	79	157.2	49.4	1	NA
08KH31-111	592	8104	3.8	21.9072	28.8	0.0537	29	0.0085	3.6	0.12	54.7	2	53.1	15	-21	708.8	54.7	2	NA
08KH31-112	861	394647	1.4	10.436	1	2.9649	1.6	0.2244	1.3	0.8	1305.1	15.6	1398.7	12.5	1544.3	18.5	1544.3	18.5	84.5
08KH31-113	127	3581	1.5	3.5429	645	0.3402	645.1	0.0087	11.3	0.02	56.1	6.3	297.3	#####	3375.4	246.5	56.1	6.3	NA
08KH31-114	188	18572	0.3	24.361	28.2	0.0629	28.5	0.0111	4.4	0.15	71.3	3.1	62	17.2	-284.5	730.6	71.3	3.1	NA
08KH31-115	523	134207	4.1	12.8797	0.5	1.9294	2.5	0.1802	2.4	0.98	1068.2	24.1	1091.3	16.7	1137.7	9.6	1137.7	9.6	93.9
08KH31-116	135	2186	1.4	22.4814	50.5	0.0521	51.7	0.0085	11.3	0.22	54.5	6.1	51.5	26	-84	1312.6	54.5	6.1	NA
08KH31-117	577	46496	25.8	18.0744	17.5	0.0707	19.2	0.0093	8	0.42	59.5	4.7	69.4	12.9	425.4	392.3	59.5	4.7	NA
08KH31-118	112	77408	1.7	8.179	0.7	6.4235	3.4	0.381	3.3	0.98	2081.1	59.5	2035.5	30.1	1989.5	13	1989.5	13	104.6
08KH31-119	987	4998	13.1	12.7932	1.1	0.963	5.1	0.0894	5	0.98	551.7	26.3	684.9	25.3	1151.1	21	551.7	26.3	47.9
08KH31-120	145	151636	0.3	9.243	1	4.7935	17.5	0.3213	17.4	1	1796.3	273.6	1783.8	147.8	1769.1	18.4	1769.1	18.4	101.5

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 9)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH28-1	97	16692	0.6	17.5661	6.7	0.6103	6.8	0.0777	1.5	0.22	482.7	6.9	483.7	26.3	488.7	147.4	482.7	6.9	98.8
08KH28-2	3208	78414	4.4	20.7747	1.8	0.0589	2.5	0.0089	1.8	0.7	56.9	1	58.1	1.4	105.9	42.5	56.9	1	NA
08KH28-3	1132	13397	123.1	21.0487	11.4	0.0316	11.6	0.0048	2	0.17	31	0.6	31.6	3.6	74.9	271.9	31	0.6	NA
08KH28-4	623	553850	9.9	9.8588	0.3	3.3929	1.9	0.2426	1.8	0.99	1400.2	23	1502.8	14.5	1650.5	5.6	1650.5	5.6	84.8
08KH28-5	758	21949	2	20.9625	5.8	0.0633	6	0.0096	1.7	0.28	61.8	1.1	62.3	3.7	84.6	137.5	61.8	1.1	NA
08KH28-6	1853	162002	1.1	17.4616	0.9	0.5986	3.7	0.0758	3.5	0.97	471	16.1	476.3	13.9	501.9	20.5	471	16.1	93.9
08KH28-7	891	15401	2.1	23.2503	13.3	0.0316	13.4	0.0053	2.2	0.16	34.2	0.7	31.6	4.2	-167	331.4	34.2	0.7	NA
08KH28-8	346	461015	1.6	9.9364	0.2	3.773	1.9	0.2719	1.9	0.99	1550.4	25.8	1587	15.1	1635.9	3.7	1635.9	3.7	94.8
08KH28-9	1301	9603	22	22.2488	18.5	0.0133	18.9	0.0021	4.3	0.23	13.8	0.6	13.4	2.5	-58.5	453	13.8	0.6	NA
08KH28-10	127	9837	0.9	23.8827	19.6	0.1111	20	0.0192	4.3	0.21	122.8	5.2	106.9	20.3	-234.2	498.1	122.8	5.2	NA
08KH28-11	171	85384	0.9	14.875	1.8	1.3019	3.9	0.1405	3.5	0.88	847.2	27.7	846.6	22.7	844.8	38.3	847.2	27.7	100.3
08KH28-12	397	12934	1.2	25.6535	36	0.047	36.1	0.0087	2.6	0.07	56.1	1.5	46.6	16.4	-418	967.5	56.1	1.5	NA
08KH28-13	919	251620	10.1	15.4663	1.5	0.9589	2.7	0.1076	2.2	0.83	658.6	13.9	682.7	13.3	763.2	31.5	658.6	13.9	86.3
08KH28-14	1331	189480	9.7	16.8304	0.3	0.7377	1.8	0.0901	1.8	0.99	555.8	9.5	561.1	7.8	582.4	6.1	555.8	9.5	95.4
08KH28-15	2383	32896	1.5	20.9485	3.7	0.039	4	0.0059	1.6	0.39	38.1	0.6	38.8	1.5	86.2	86.6	38.1	0.6	NA
08KH28-16	615	7423	1.2	17.7558	6.3	0.064	8	0.0082	4.9	0.61	52.9	2.6	63	4.9	465	139.4	52.9	2.6	NA
08KH28-17	474	60756	1.9	17.301	2.8	0.5894	6.9	0.074	6.3	0.91	460	27.9	470.5	25.9	522.2	62	460	27.9	88.1
08KH28-19	1932	6938	0.6	19.1327	9	0.028	9.3	0.0039	2.2	0.23	25	0.5	28	2.6	297.1	206.7	25	0.5	NA
08KH28-20	1549	4354	12.7	16.9427	2.8	0.1857	9.5	0.0228	9	0.95	145.5	13	173	15.1	567.9	62	145.5	13	NA
08KH28-21	183	87285	1.4	10.2054	1	2.9174	6.8	0.2159	6.7	0.99	1260.4	76.9	1386.4	51.5	1586.2	19.4	1586.2	19.4	79.5
08KH28-22	610	121882	11.4	15.7216	0.6	0.8728	2.2	0.0995	2.1	0.96	611.6	12.3	637.1	10.4	728.6	13.6	611.6	12.3	83.9
08KH28-23	70	17836	1.2	13.5717	3.7	1.766	24.4	0.1738	24.1	0.99	1033.2	229.9	1033.1	159.2	1032.8	75.3	1032.8	75.3	100
08KH28-25	67	3806	1.2	24.6165	24.6	0.1579	25.5	0.0282	6.8	0.27	179.2	12.1	148.9	35.3	-311.2	637.5	179.2	12.1	NA
08KH28-26	133	51661	1.5	14.0994	1.4	1.5639	2.2	0.1599	1.6	0.76	956.4	14.5	956	13.3	955.2	28.7	956.4	14.5	100.1
08KH28-27	627	123834	4.5	17.3281	1	0.6302	2.4	0.0792	2.1	0.91	491.3	10.2	496.2	9.2	518.7	20.9	491.3	10.2	94.7
08KH28-28	2772	44100	23	20.9943	7.4	0.0175	7.6	0.0027	1.7	0.23	17.2	0.3	17.7	1.3	81	175.4	17.2	0.3	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 9)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±		206Pb*	±	207Pb*	±	206Pb*	±			
		204Pb		207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
08KH28-29	936	125426	5.7	13.6283	0.8	0.679	10.1	0.0671	10	1	418.7	40.7	526.1	41.4	1024.4	17	418.7	40.7	40.9
08KH28-30	272	12611	0.5	19.7368	7.7	0.138	8.1	0.0198	2.4	0.3	126.1	3	131.3	10	225.7	178.8	126.1	3	NA
08KH28-31	473	11282	0.9	21.8387	15.4	0.0487	15.8	0.0077	3.6	0.23	49.6	1.8	48.3	7.5	-13.4	373.3	49.6	1.8	NA
08KH28-32	729	25042	0.7	20.8679	3.8	0.0655	4.1	0.0099	1.6	0.38	63.6	1	64.4	2.5	95.4	89.3	63.6	1	NA
08KH28-33	451	14896	2.2	24.795	13	0.0587	13.8	0.0106	4.6	0.33	67.7	3.1	57.9	7.8	-329.7	335.1	67.7	3.1	NA
08KH28-34	343	17318	3	16.8055	11.3	0.25	13.5	0.0305	7.3	0.54	193.5	14	226.5	27.4	585.6	246.2	193.5	14	NA
08KH28-36	820	67934	0.9	20.848	4.1	0.1111	4.5	0.0168	1.9	0.42	107.4	2	107	4.5	97.6	96.2	107.4	2	NA
08KH28-37	361	18096	1.5	18.8013	9.4	0.111	12	0.0151	7.5	0.63	96.9	7.3	106.9	12.2	336.8	212.2	96.9	7.3	NA
08KH28-38	860	244153	1.1	17.3821	1	0.6406	2.8	0.0808	2.7	0.94	500.7	12.8	502.7	11.2	511.9	20.9	500.7	12.8	97.8
08KH28-39	411	192926	3.8	14.6386	0.5	1.2731	1.9	0.1352	1.8	0.97	817.3	13.8	833.8	10.6	878	9.4	817.3	13.8	93.1
08KH28-40	83	5966	1.9	19.7981	14.1	0.1933	15.5	0.0278	6.4	0.41	176.5	11.1	179.4	25.4	218.5	327.6	176.5	11.1	NA
08KH28-41	406	105968	1.2	12.5725	0.4	2.167	1.5	0.1976	1.4	0.97	1162.4	15	1170.5	10.1	1185.6	7	1185.6	7	98
08KH28-42	1407	12736	5.4	17.3892	1	0.2841	3.2	0.0358	3	0.95	227	6.8	253.9	7.2	511	22.1	227	6.8	NA
08KH28-43	313	214628	5	11.4335	0.6	2.7384	3.6	0.2271	3.6	0.99	1319.2	42.4	1338.9	26.7	1370.7	10.8	1370.7	10.8	96.2
08KH28-44	530	7442	1	25.7205	37.4	0.0267	37.8	0.005	5.2	0.14	32.1	1.7	26.8	10	-424.9	1011	32.1	1.7	NA
08KH28-46	280	7143	0.7	24.9118	21.4	0.0437	22.5	0.0079	6.8	0.3	50.7	3.5	43.4	9.6	-341.8	556.7	50.7	3.5	NA
08KH28-47	260	30542	2.8	17.8905	3.9	0.2393	9.9	0.0311	9.1	0.92	197.1	17.7	217.9	19.4	448.2	85.7	197.1	17.7	NA
08KH28-48	350	33270	2.2	17.3065	2.2	0.3819	6	0.0479	5.5	0.93	301.8	16.3	328.4	16.8	521.5	49	301.8	16.3	NA
08KH28-49	811	13412	1.1	22.7189	6.7	0.0655	7	0.0108	2	0.29	69.2	1.4	64.4	4.4	-109.8	164.4	69.2	1.4	NA
08KH28-50	267	9933	1.4	23.9835	16.8	0.0746	17.1	0.013	3	0.18	83.1	2.5	73	12.1	-244.9	428.3	83.1	2.5	NA
08KH28-101	675	68569	3.1	19.7069	3.4	0.2341	4.2	0.0335	2.4	0.57	212.2	5	213.6	8	229.2	78.9	212.2	5	NA
08KH28-102	746	33539	4.7	19.7135	3.2	0.1831	5.2	0.0262	4.1	0.79	166.6	6.7	170.8	8.1	228.5	73.9	166.6	6.7	NA
08KH28-104	1296	1311685	4.2	10.4126	1	3.0376	3.3	0.2294	3.1	0.95	1331.3	37.9	1417.1	25.2	1548.5	18.5	1548.5	18.5	86
08KH28-105	1291	363327	21.7	15.2026	1.1	0.8822	3.2	0.0973	3	0.94	598.4	16.9	642.2	15	799.3	23.4	598.4	16.9	74.9
08KH28-109	2022	796347	142.8	13.5867	10.5	0.9474	13.5	0.0934	8.4	0.63	575.4	46.5	676.8	66.8	1030.5	213.6	575.4	46.5	55.8

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 9)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
		204Pb		206Pb* / 207Pb*	± (%)	207Pb* / 235U*	± (%)	206Pb* / 238U	± (%)		206Pb* / 238U*	± (Ma)	207Pb* / 235U	± (Ma)	206Pb* / 207Pb*	± (Ma)			
08KH28-110	346	112433	1.8	15.0378	1.3	1.2214	2.6	0.1332	2.3	0.87	806.2	17.3	810.4	14.6	822.1	26.7	806.2	17.3	98.1
08KH28-111	648	151087	2.7	15.0654	0.4	1.073	3.1	0.1172	3	0.99	714.6	20.5	740.2	16.1	818.3	8.4	714.6	20.5	87.3
08KH28-112	722	75823	9.3	17.3604	1.3	0.266	8.2	0.0335	8.1	0.99	212.4	17	239.5	17.6	514.7	28.3	212.4	17	NA
08KH28-113	606	32887	1.4	17.4878	4.7	0.2275	11.7	0.0289	10.7	0.91	183.4	19.3	208.1	22	498.6	103.8	183.4	19.3	NA
08KH28-114	522	5897	2.7	21.8353	11.9	0.0467	12.7	0.0074	4.4	0.35	47.5	2.1	46.4	5.7	-13	287.7	47.5	2.1	NA
08KH28-115	794	83468	20.8	13.4539	4.4	0.5371	10	0.0524	8.9	0.9	329.3	28.7	436.5	35.5	1050.4	89.6	329.3	28.7	NA
08KH28-116	38	38832	0.7	11.5651	4.5	2.7186	5.5	0.228	3.1	0.57	1324.2	37.5	1333.6	40.6	1348.6	86.5	1348.6	86.5	98.2
08KH28-118	772	191033	1.2	16.8034	9	0.6082	10.9	0.0741	6.3	0.57	460.9	27.9	482.4	42	585.9	194.9	460.9	27.9	78.7
08KH28-119	564	149231	2.8	15.0929	1.1	1.0545	2.5	0.1154	2.2	0.9	704.2	14.9	731.1	12.9	814.5	23.1	704.2	14.9	86.5
08KH28-121	869	77417	3.6	17.6226	0.5	0.5943	4.7	0.076	4.7	0.99	472	21.2	473.6	17.7	481.6	10.8	472	21.2	98
08KH28-122	495	152264	4.8	12.7291	2.2	1.7561	2.7	0.1621	1.6	0.58	968.6	14.1	1029.4	17.5	1161.1	43.5	1161.1	43.5	83.4
08KH28-123	513	172264	5.9	12.5551	0.4	1.8107	2.4	0.1649	2.4	0.98	983.8	21.8	1049.3	15.9	1188.3	8.7	1188.3	8.7	82.8
08KH28-124	140	89614	1.9	10.9664	1.1	3.3017	7.3	0.2626	7.2	0.99	1503.2	96.3	1481.5	56.7	1450.5	21	1450.5	21	103.6
08KH28-125	362	33023	1	12.5356	1.6	2.066	2.1	0.1878	1.4	0.67	1109.6	14.7	1137.6	14.7	1191.4	31.3	1191.4	31.3	93.1
08KH28-126	345	53905	3.5	16.0894	2.7	0.6284	7.4	0.0733	6.9	0.93	456.2	30.6	495.1	29.2	679.3	57.4	456.2	30.6	67.1
08KH28-127	433	141934	5.1	17.7325	2.3	0.6159	3.2	0.0792	2.2	0.7	491.4	10.6	487.2	12.4	467.9	50.8	491.4	10.6	105
08KH28-128	1171	145535	27.1	15.834	2.2	0.6596	13.9	0.0757	13.8	0.99	470.7	62.5	514.4	56.3	713.5	46.4	470.7	62.5	66
08KH28-129	781	277591	77.4	15.2505	0.5	0.9846	8.3	0.1089	8.3	1	666.4	52.6	696	42	792.7	9.7	666.4	52.6	84.1
08KH28-131	785	487477	2.4	15.0495	0.8	1.2639	7.1	0.138	7	0.99	833.1	55	829.7	40.1	820.5	16	833.1	55	101.5
08KH28-132	269	44808	1.5	17.4941	2.9	0.61	7.1	0.0774	6.5	0.91	480.6	30	483.6	27.2	497.8	63.3	480.6	30	96.5
08KH28-133	97	121387	1.6	4.954	0.8	15.7769	5.1	0.5669	5	0.99	2894.9	117.7	2863.4	48.9	2841.3	13.4	2841.3	13.4	101.9
08KH28-134	242	14473	1.6	19.557	9	0.2146	10.7	0.0304	5.7	0.53	193.3	10.8	197.4	19.2	246.8	208.5	193.3	10.8	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 9)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH28-135	944	20916	3.2	19.5169	3.6	0.234	4.5	0.0331	2.7	0.6	210.1	5.5	213.5	8.6	251.6	82.2	210.1	5.5	NA
08KH28-136	321	117037	1.2	11.9503	0.7	2.4805	1.9	0.215	1.8	0.94	1255.3	20	1266.4	13.6	1285.1	12.9	1285.1	12.9	97.7
08KH28-137	96	60452	0.4	12.4661	1.5	2.0797	3.3	0.188	2.9	0.89	1110.7	30	1142.1	22.6	1202.3	29.4	1202.3	29.4	92.4
08KH28-138	1308	4706	0.8	20.0873	15.2	0.0525	16.1	0.0076	5.3	0.33	49.1	2.6	51.9	8.2	184.8	356.6	49.1	2.6	NA
08KH28-139	769	539299	8.3	15.2439	1.1	1.0781	4	0.1192	3.8	0.96	725.9	26.4	742.7	21.1	793.6	23.1	725.9	26.4	91.5
08KH28-140	327	93328	1.8	13.2477	0.7	1.8459	2.3	0.1774	2.2	0.96	1052.5	21.6	1062	15.3	1081.4	13.5	1081.4	13.5	97.3
08KH28-141	779	26375	3.3	20.2621	7.3	0.0891	7.5	0.0131	1.8	0.24	83.8	1.5	86.6	6.2	164.6	170.2	83.8	1.5	NA
08KH28-142	333	3699	1.7	22.6842	31.7	0.0306	33.9	0.005	11.8	0.35	32.4	3.8	30.6	10.2	-106	798	32.4	3.8	NA
08KH28-143	467	87609	1.4	17.3442	1.6	0.6364	3.4	0.0801	3	0.88	496.4	14.4	500.1	13.5	516.7	35.9	496.4	14.4	96.1
08KH28-144	1323	16943	1.1	20.6399	5.2	0.0542	6.4	0.0081	3.7	0.57	52.1	1.9	53.6	3.3	121.3	123.1	52.1	1.9	NA
08KH28-145	321	7691	1.2	24.9313	17.2	0.0959	17.4	0.0173	2.9	0.17	110.8	3.2	93	15.5	-343.8	445.9	110.8	3.2	NA
08KH28-147	67	5081	1.6	25.6083	30.6	0.1573	30.9	0.0292	4.5	0.14	185.6	8.2	148.3	42.7	-413.4	815.9	185.6	8.2	NA
08KH28-148	522	24277	13.1	10.8414	0.9	1.0466	4.5	0.0823	4.4	0.98	509.8	21.5	727.2	23.2	1472.3	16.2	509.8	21.5	34.6
08KH28-149	168	104217	1.2	10.5561	0.9	3.2196	5.3	0.2465	5.3	0.99	1420.4	67	1461.9	41.3	1522.7	16.2	1522.7	16.2	93.3
08KH28-150	820	26869	37.4	6.0522	8.3	0.3992	10.8	0.0175	6.9	0.64	112	7.7	341.1	31.2	2509.9	139.1	112	7.7	NA
08KH28-152	211	29768	2.3	17.7644	2.8	0.554	4.1	0.0714	3	0.73	444.4	12.7	447.6	14.8	463.9	62.1	444.4	12.7	95.8
08KH28-154	381	8061	1.8	28.8266	27.7	0.0385	28.2	0.0081	5	0.18	51.7	2.6	38.4	10.6	-733.4	787.7	51.7	2.6	NA
08KH28-155	249	73199	2.6	17.5507	2.4	0.6476	4.7	0.0824	4	0.86	510.6	19.7	507	18.8	490.7	53.7	510.6	19.7	104.1
08KH28-157	263	43272	1.5	17.1906	2.7	0.6544	10.6	0.0816	10.2	0.97	505.6	49.6	511.2	42.5	536.2	60	505.6	49.6	94.3
08KH28-159	884	2438	21.2	20.6622	7.6	0.0631	8.1	0.0095	2.9	0.35	60.7	1.7	62.1	4.9	118.7	179.5	60.7	1.7	NA
08KH28-160	287	80847	1.8	17.6705	2.6	0.6069	4.5	0.0778	3.7	0.82	482.8	17.3	481.6	17.4	475.6	56.8	482.8	17.3	101.5
08KH28-161	187	138199	2.2	9.9786	0.8	3.8436	3.3	0.2782	3.2	0.97	1582.1	45.2	1601.9	26.7	1628.1	13.9	1628.1	13.9	97.2

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 9)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
		204Pb		206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)		206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)			
08KH28-162	1049	221836	50.2	14.8826	1.7	0.8602	5.2	0.0928	4.9	0.95	572.4	26.9	630.2	24.4	843.7	35.3	572.4	26.9	67.8
08KH28-163	240	55839	1.4	13.8663	0.9	1.6675	3.2	0.1677	3.1	0.96	999.4	28.5	996.2	20.3	989.2	17.8	999.4	28.5	101
08KH28-164	291	140201	3.3	8.8065	0.5	5.2138	7	0.333	7	1	1852.9	112.7	1854.9	59.9	1857	9.7	1857	9.7	99.8
08KH28-165	68	1088	2	25.6928	58.1	0.0455	60.6	0.0085	17	0.28	54.4	9.2	45.2	26.8	-422	1650.1	54.4	9.2	NA
08KH28-166	519	44590	10.7	17.7393	2.6	0.2336	6.1	0.0301	5.5	0.9	190.9	10.3	213.2	11.7	467.1	57.9	190.9	10.3	NA
08KH28-167	617	246379	1.4	15.1512	0.7	1.227	6.4	0.1348	6.4	0.99	815.4	49	813	36	806.4	14.1	815.4	49	101.1
08KH28-168	303	242105	2.6	12.6301	0.8	2.112	1.2	0.1935	1	0.78	1140.1	10.1	1152.7	8.5	1176.6	15.3	1176.6	15.3	96.9
08KH28-170	303	162912	2.3	9.8511	0.5	4.0339	2	0.2882	2	0.97	1632.6	28.2	1641.1	16.3	1651.9	8.4	1651.9	8.4	98.8
08KH28-171	1990	820950	5	10.1477	0.1	3.1628	1.8	0.2328	1.8	1	1349.1	22	1448.1	14	1596.7	1.9	1596.7	1.9	84.5
08KH28-173	2086	20199	124.2	22.0359	8.9	0.024	9.8	0.0038	4.1	0.42	24.6	1	24.1	2.3	-35.2	215.5	24.6	1	NA
08KH28-174	1111	21336	4.9	19.158	5.6	0.2126	6.1	0.0295	2.4	0.39	187.6	4.4	195.7	10.8	294	127.2	187.6	4.4	NA
08KH28-174	395	168200	12.6	11.4559	2	2.3183	3.9	0.1926	3.4	0.86	1135.5	35.3	1217.9	27.9	1366.9	38.3	1366.9	38.3	83.1
08KH28-176	858	113891	89.4	17.0183	0.8	0.7213	2.8	0.089	2.7	0.96	549.8	14.2	551.4	12	558.2	17.6	549.8	14.2	98.5
08KH28-177	641	117515	3	17.3407	1	0.6277	3.6	0.0789	3.5	0.96	489.8	16.3	494.6	14.1	517.1	22.1	489.8	16.3	94.7
08KH28-178	189	158551	1.2	10.0421	0.6	3.9758	0.9	0.2896	0.7	0.76	1639.4	10.1	1629.3	7.5	1616.2	11.1	1616.2	11.1	101.4
08KH28-179	726	37354	21.3	17.5406	4.7	0.091	9.1	0.0116	7.8	0.85	74.2	5.8	88.4	7.7	492	104.8	74.2	5.8	NA
08KH28-180	1095	3302	1.5	14.9331	27.1	0.069	27.4	0.0075	4	0.15	48	1.9	67.7	17.9	836.7	574	48	1.9	NA
08KH28-181	592	893	2.3	18.8836	16.4	0.0723	17.3	0.0099	5.4	0.31	63.6	3.4	70.9	11.8	326.9	374.3	63.6	3.4	NA
08KH28-182	387	71080	2.6	17.523	2	0.5744	3.2	0.073	2.5	0.79	454.2	11.1	460.8	11.9	494.1	43.3	454.2	11.1	91.9
08KH28-182	808	30613	71.4	23.8516	26.2	0.0242	26.5	0.0042	4.2	0.16	26.9	1.1	24.3	6.4	-231	669.4	26.9	1.1	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 @ 11)

				Isotope ratios							Apparent ages (Ma)								
Grain	U (ppm)	206Pb 204Pb	U/Th	206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH34-1	522	797611	0.9	9.9136	0.2	4.0153	2.2	0.2887	2.2	1	1635	31.7	1637.3	17.9	1640.2	3.2	1640.2	3.2	99.7
08KH34-2	2172	37242	33.8	21.0747	3	0.0643	3.6	0.0098	2	0.56	63	1.3	63.2	2.2	71.9	70.2	63	1.3	NA
08KH34-3	832	17437	1.3	9.6243	0.3	3.1049	10.1	0.2167	10.1	1	1264.5	115.8	1433.9	77.7	1695	6	1695	6	74.6
08KH34-4	207	258470	1.6	10.1394	0.8	3.5939	3	0.2643	2.9	0.96	1511.7	38.8	1548.2	23.8	1598.3	15.3	1598.3	15.3	94.6
08KH34-5	1316	84121	1	20.9964	3.3	0.0763	4.5	0.0116	3	0.67	74.5	2.2	74.7	3.2	80.8	79.5	74.5	2.2	NA
08KH34-6	326	4531	1.3	12.314	2	1.5044	3.4	0.1344	2.8	0.82	812.7	21.2	932.2	20.7	1226.5	38.5	1226.5	38.5	66.3
08KH34-7	549	8573	4.4	19.969	9.9	0.0462	14.6	0.0067	10.7	0.73	43	4.6	45.8	6.6	198.6	231.1	43	4.6	NA
08KH34-8	479	16495	0.8	12.4842	2.4	1.7939	5	0.1624	4.4	0.88	970.2	40	1043.2	32.8	1199.5	46.7	1199.5	46.7	80.9
08KH34-10	233	16770	1	13.6315	1.3	1.7872	4.1	0.1767	3.8	0.94	1048.9	37.1	1040.8	26.4	1023.9	27	1023.9	27	102.4
08KH34-11	715	20561	0.9	20.5332	8.1	0.0785	8.3	0.0117	1.9	0.22	75	1.4	76.8	6.1	133.5	190.2	75	1.4	NA
08KH34-12	467	545112	3	8.7877	0.3	4.6223	8	0.2946	8	1	1664.5	117.6	1753.3	67.1	1860.9	5.2	1860.9	5.2	89.4
08KH34-13	992	24909	2.5	22.2525	6.5	0.0392	6.9	0.0063	2.3	0.33	40.7	0.9	39	2.6	-58.9	158.4	40.7	0.9	NA
08KH34-14	4125	790222	2.6	17.482	0.1	0.5536	11.7	0.0702	11.7	1	437.3	49.4	447.3	42.3	499.3	1.9	499.3	1.9	87.6
08KH34-15	1606	70298	1.4	20.7537	2	0.0796	3.3	0.012	2.6	0.79	76.8	2	77.8	2.4	108.3	46.8	76.8	2	NA
08KH34-16	2160	20482	17.7	19.9711	4	0.0639	4.4	0.0093	2	0.45	59.4	1.2	62.9	2.7	198.3	92.1	59.4	1.2	NA
08KH34-17	307	19444	1.5	12.4569	0.8	1.6662	4.1	0.1505	4.1	0.98	903.9	34.2	995.7	26.2	1203.8	16.2	1203.8	16.2	75.1
08KH34-18	358	420489	2.7	14.3009	0.9	1.4577	1.6	0.1512	1.3	0.83	907.7	11	913.1	9.4	926.1	17.9	926.1	17.9	98
08KH34-19	553	2482	0.3	18.7108	15.1	0.093	15.6	0.0126	3.7	0.24	80.8	2.9	90.3	13.4	347.7	343.8	80.8	2.9	NA
08KH34-20	245	148616	1.1	11.1097	0.7	2.8651	3.5	0.2309	3.4	0.98	1339	41.1	1372.8	26.2	1425.8	13.9	1425.8	13.9	93.9
08KH34-21	297	22837	1.5	19.4327	3.2	0.2669	6.8	0.0376	6	0.88	238.1	14	240.2	14.6	261.4	73.5	238.1	14	NA
08KH34-22	188	146591	1.2	9.8578	0.4	3.9627	1.4	0.2833	1.3	0.95	1608	18.6	1626.6	11.1	1650.7	7.9	1650.7	7.9	97.4
08KH34-23	163	85999	0.4	12.7322	1.3	2.0597	2.7	0.1902	2.4	0.88	1122.5	24.4	1135.5	18.5	1160.6	25.6	1160.6	25.6	96.7
08KH34-24	86	49346	1.1	13.7321	2.6	1.6849	3.3	0.1678	2.1	0.62	1000	19.2	1002.8	21.2	1009	52.9	1009	52.9	99.1
08KH34-25	1100	28981	0.6	21.8837	6.5	0.046	9.4	0.0073	6.7	0.72	46.9	3.1	45.7	4.2	-18.4	158.2	46.9	3.1	NA
08KH34-26	5114	19855	0.5	20.8012	0.8	0.1775	20.2	0.0268	20.1	1	170.3	33.8	165.9	30.8	102.9	18.2	170.3	33.8	NA
08KH34-27	295	25687	1.3	12.7516	1	1.4591	4.7	0.1349	4.6	0.98	816	35.4	913.6	28.5	1157.6	20.6	1157.6	20.6	70.5

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (2000 @ 11)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±		206Pb*	±	207Pb*	±	206Pb*	±			
		204Pb		207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
08KH34-28	809	1274	0.9	19.3719	8.1	0.0808	8.1	0.0113	1.2	0.15	72.7	0.9	78.9	6.2	268.6	185	72.7	0.9	NA
08KH34-29	169	193862	2.1	10.8125	1.4	2.9527	2.9	0.2315	2.6	0.88	1342.6	31.4	1395.5	22.2	1477.4	26	1477.4	26	90.9
08KH34-30	2739	427893	6.1	17.5796	0.3	0.3866	4.6	0.0493	4.6	1	310.1	13.9	331.9	13	487.1	6.3	310.1	13.9	NA
08KH34-33	243	325224	0.9	9.8733	0.5	3.8278	1.5	0.2741	1.4	0.94	1561.6	20	1598.6	12.4	1647.8	9.7	1647.8	9.7	94.8
08KH34-34	1219	85628	0.5	21.2404	5.8	0.0764	6.8	0.0118	3.5	0.52	75.4	2.7	74.7	4.9	53.3	137.6	75.4	2.7	NA
08KH34-35	945	27391	3.9	16.6608	0.9	0.6753	3.4	0.0816	3.3	0.97	505.7	15.8	523.9	13.8	604.3	18.7	604.3	18.7	83.7
08KH34-36	798	146796	19.9	10.725	0.6	0.5114	19.6	0.0398	19.6	1	251.5	48.2	419.4	67.3	1492.7	11.1	251.5	48.2	NA
08KH34-38	123	28105	1.7	12.8362	1.5	1.7982	6.2	0.1674	6	0.97	997.8	55.5	1044.8	40.4	1144.4	29	1144.4	29	87.2
08KH34-39	400	18752	0.7	7.3542	0.4	6.1026	9.6	0.3255	9.6	1	1816.5	151.4	1990.6	83.7	2176.6	7.8	2176.6	7.8	83.5
08KH34-40	107	52886	0.8	12.5987	1.4	1.9636	2.3	0.1794	1.8	0.8	1063.8	17.9	1103.1	15.3	1181.5	26.7	1181.5	26.7	90
08KH34-42	168	166336	1.2	12.795	1.3	2.0442	2.1	0.1897	1.7	0.8	1119.7	17.5	1130.4	14.5	1150.8	25	1150.8	25	97.3
08KH34-45	126	142632	1.5	4.8839	0.3	15.7647	2.4	0.5584	2.4	0.99	2860	54.7	2862.6	22.7	2864.5	4.3	2864.5	4.3	99.8
08KH34-46	468	31654	1.6	20.0104	8.7	0.1299	10.1	0.0188	5.2	0.51	120.4	6.2	124	11.8	193.8	202.3	120.4	6.2	NA
08KH34-47	105	3061	0.9	12.6584	95.9	0.0699	96.8	0.0064	12.9	0.13	41.2	5.3	68.6	64.3	1172.1	#VALUE!	41.2	5.3	NA
08KH34-48	414	13304	1.7	21.7007	18.7	0.0559	20.7	0.0088	8.8	0.43	56.5	5	55.2	11.1	1.9	455.1	56.5	5	NA
08KH34-50	1008	147814	1.1	17.5615	0.9	0.6107	3.8	0.0778	3.7	0.97	482.8	17	484	14.5	489.3	20.1	489.3	20.1	98.7

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 7)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH24-1	765	281514	2.3	17.4342	0.9	0.5939	1.9	0.0751	1.6	0.87	466.8	7.4	473.3	7.1	505.3	20.6	466.8	7.4	92.4
08KH24-2	178	29263	1.9	17.638	5.6	0.4384	18.8	0.0561	17.9	0.95	351.8	61.4	369.1	58.2	479.7	124	351.8	61.4	NA
08KH24-3	181	33299	1	17.1169	3.2	0.6458	4.7	0.0802	3.4	0.72	497.1	16.1	505.9	18.6	545.6	70.9	497.1	16.1	91.1
08KH24-5	344	140209	1.5	17.0465	2	0.6458	5.6	0.0798	5.2	0.93	495.2	24.8	505.9	22.2	554.6	43.7	495.2	24.8	89.3
08KH24-7	326	86203	1.2	17.2506	2.4	0.6584	2.9	0.0824	1.7	0.57	510.3	8.1	513.6	11.7	528.6	52	510.3	8.1	96.5
08KH24-8	669	298670	1.3	14.9767	0.6	1.2763	2.3	0.1386	2.3	0.97	837	17.7	835.2	13.3	830.6	12	837	17.7	100.8
08KH24-9	351	201394	7.2	15.0913	1.2	1.079	3.8	0.1181	3.6	0.95	719.6	24.6	743.1	20	814.7	25	719.6	24.6	88.3
08KH24-10	134	26185	0.9	17.7631	8	0.6052	8.3	0.078	2	0.24	484	9.2	480.5	31.7	464.1	178.4	484	9.2	104.3
08KH24-11	67	28202	1.5	14.0424	2.7	1.5262	5.1	0.1554	4.3	0.84	931.4	37.3	941	31.3	963.5	56	931.4	37.3	96.7
08KH24-12	186	336851	1.8	11.3428	0.8	2.888	2.8	0.2376	2.7	0.96	1374.1	33.6	1378.8	21.3	1386	14.7	1386	14.7	99.1
08KH24-14	145	114826	3.7	9.8284	0.7	3.8907	2.6	0.2773	2.5	0.97	1577.9	34.6	1611.8	20.7	1656.2	12.3	1656.2	12.3	95.3
08KH24-15	256	1651	53.3	1.9181	798	0.1075	798.4	0.0015	24.4	0.03	9.6	2.3	103.7	1048	NA	NA	9.6	2.3	NA
08KH24-17	1650	47870	1	17.3024	1.1	0.6176	2.1	0.0775	1.8	0.87	481.2	8.5	488.4	8.2	522	23.3	481.2	8.5	92.2
08KH24-18	220	24535	1	16.3448	7	0.6679	7.4	0.0792	2.2	0.3	491.2	10.3	519.5	30	645.6	151.5	491.2	10.3	76.1
08KH24-19	47	30823	1.7	14.0305	5.6	1.6606	5.7	0.169	1.2	0.21	1006.5	11.1	993.6	36.3	965.3	114.6	1006.5	11.1	104.3
08KH24-20	3508	657586	4.1	17.2244	0.2	0.604	2.2	0.0755	2.2	0.99	468.9	9.9	479.8	8.4	531.9	5.4	468.9	9.9	88.2
08KH24-21	327	27374	1.8	17.4883	1.6	0.6004	2.6	0.0762	2	0.79	473.2	9.3	477.5	9.8	498.5	34.9	473.2	9.3	94.9
08KH24-22	247	93343	1.5	13.7993	0.8	1.7252	1.6	0.1727	1.4	0.89	1026.7	13.7	1017.9	10.5	999.1	15.3	999.1	15.3	102.8
08KH24-23	2275	522928	2.2	17.2165	0.4	0.6332	1.6	0.0791	1.6	0.98	490.6	7.6	498.1	6.5	532.9	7.8	490.6	7.6	92
08KH24-24	294	86397	1.9	17.2727	1.6	0.6547	3.7	0.082	3.4	0.91	508.2	16.5	511.4	15	525.8	34.5	508.2	16.5	96.7
08KH24-25	188	63147	1.5	17.7293	3.5	0.5873	3.8	0.0755	1.5	0.39	469.3	6.7	469.2	14.3	468.3	77.4	469.3	6.7	100.2
08KH24-26	1045	25201	27.6	20.8634	6.6	0.0262	21.5	0.004	20.5	0.95	25.5	5.2	26.3	5.6	95.8	156.9	25.5	5.2	NA
08KH24-27	703	8223	28.2	26.8759	42.9	0.02	43	0.0039	2.6	0.06	25.1	0.6	20.1	8.6	-541.4	1199.3	25.1	0.6	NA
08KH24-28	687	259520	1.6	14.9045	0.3	1.2429	1.9	0.1344	1.9	0.98	812.7	14.3	820.2	10.7	840.7	6.9	812.7	14.3	96.7
08KH24-29	323	155376	2.4	17.3073	1.7	0.6293	3.9	0.079	3.5	0.9	490.1	16.5	495.7	15.3	521.4	37.1	490.1	16.5	94
08KH24-30	376	84854	2.4	17.2617	2.1	0.6082	3.6	0.0761	3	0.82	473	13.5	482.4	14	527.2	46	473	13.5	89.7

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 7)

				Isotope ratios							Apparent ages (Ma)								
Grain	U (ppm)	206Pb/204Pb	U/Th	206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH24-31	270	35149	1.7	17.6737	1.7	0.6015	2.2	0.0771	1.5	0.66	478.8	6.8	478.2	8.5	475.3	37.3	478.8	6.8	100.7
08KH24-32	540	116576	1.7	17.5348	1.5	0.4932	3	0.0627	2.5	0.85	392.1	9.6	407.1	9.9	492.6	34.1	392.1	9.6	NA
08KH24-34	60	810	1.4	6.7071	178	0.137	179.4	0.0067	23.1	0.13	42.8	9.8	130.3	223	2335.6	178	42.8	9.8	NA
08KH24-35	1911	302900	2.5	17.3333	0.4	0.6408	1.6	0.0806	1.6	0.97	499.4	7.6	502.8	6.5	518.1	9.4	499.4	7.6	96.4
08KH24-36	1487	422976	6.9	17.415	0.7	0.6245	1.9	0.0789	1.8	0.93	489.4	8.3	492.6	7.4	507.8	15.9	489.4	8.3	96.4
08KH24-38	5309	383184	4.7	17.3941	0.3	0.6461	5.8	0.0815	5.8	1	505.1	28.1	506.1	23.1	510.4	7.4	505.1	28.1	99
08KH24-39	330	81060	2.6	17.4436	1.8	0.6017	4.2	0.0761	3.8	0.9	473	17.4	478.3	16.1	504.1	39.5	473	17.4	93.8
08KH24-40	2241	39110	257.7	20.2116	6.5	0.0245	16.5	0.0036	15.2	0.92	23.2	3.5	24.6	4	170.5	151.4	23.2	3.5	NA
08KH24-41	380	209322	1.4	13.755	0.5	1.6738	3.8	0.167	3.8	0.99	995.5	34.9	998.6	24.3	1005.6	10	1005.6	10	99
08KH24-43	177	9092	1.2	23.1166	19.4	0.0782	19.8	0.0131	3.8	0.19	83.9	3.2	76.4	14.6	-152.7	486.3	83.9	3.2	NA
08KH24-44	80	57137	2.3	13.9073	2.8	1.6183	3.1	0.1632	1.5	0.46	974.7	13.2	977.3	19.7	983.3	56.6	974.7	13.2	99.1
08KH24-45	427	266564	2.5	10.9793	0.4	2.9455	3.3	0.2346	3.3	0.99	1358.3	40.4	1393.7	25.2	1448.3	7.1	1448.3	7.1	93.8
08KH24-46	276	14631	0.7	16.9645	2	0.6066	2.8	0.0746	2	0.71	464	9.1	481.4	10.9	565.1	43.2	464	9.1	82.1
08KH24-47	176	23699	1.3	17.3365	4	0.5701	5.8	0.0717	4.2	0.72	446.3	18.1	458.1	21.4	517.7	87.8	446.3	18.1	86.2
08KH24-48	439	160653	1.5	17.3112	1	0.5522	2.9	0.0693	2.7	0.94	432.1	11.4	446.4	10.4	520.9	21.4	432.1	11.4	83
08KH24-49	250	68191	4.3	14.9965	2	1.1832	9.9	0.1287	9.7	0.98	780.4	71.1	792.8	54.4	827.9	41.1	780.4	71.1	94.3
08KH24-50	532	231338	1.8	10.7719	0.7	3.2001	3.4	0.25	3.3	0.98	1438.5	43.1	1457.2	26.5	1484.5	13.8	1484.5	13.8	96.9
08KH24-51	674	15153	99.3	24.8361	27.7	0.0237	28.4	0.0043	6	0.21	27.5	1.6	23.8	6.7	-334	725.3	27.5	1.6	NA
08KH24-52	2448	297988	11.8	17.4211	0.4	0.5782	4.8	0.0731	4.7	1	454.5	20.8	463.3	17.7	507	9.6	454.5	20.8	89.7
08KH24-53	175	54792	1.2	9.9333	1.4	3.2857	3.4	0.2367	3.1	0.92	1369.6	38.8	1477.7	26.6	1636.5	25.1	1636.5	25.1	83.7
08KH24-54	105	109450	1.3	9.8207	0.9	3.9323	1.8	0.2801	1.5	0.87	1591.8	21.7	1620.4	14.4	1657.6	16.5	1657.6	16.5	96
08KH24-55	150	86759	1.6	13.7596	1.6	1.5905	2.1	0.1587	1.3	0.63	949.7	11.6	966.5	13	1004.9	32.8	949.7	11.6	94.5
08KH24-56	56	34732	1	12.6078	3.8	2.0976	4	0.1918	1.4	0.36	1131.1	15	1148	27.7	1180	74.2	1180	74.2	95.9
08KH24-57	275	78306	4.7	14.0466	1.8	0.6838	5	0.0697	4.6	0.93	434.1	19.5	529.1	20.6	962.9	37.7	434.1	19.5	45.1
08KH24-58	864	3160	109.5	14.0638	119	0.0137	120.1	0.0014	15.3	0.13	9	1.4	13.8	16.5	960.4	461.8	9	1.4	NA
08KH24-59	974	193134	97.4	17.1933	0.7	0.6618	1.7	0.0825	1.6	0.92	511.2	7.6	515.7	6.8	535.9	14.8	511.2	7.6	95.4

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 7)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma) 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH24-60	99	34691	0.9	17.065	6.1	0.6143	6.4	0.076	1.6	0.26	472.4	7.4	486.2	24.6	552.3	134.3	472.4	7.4	85.5
08KH24-61	288	229661	1.7	11.047	0.5	2.7184	2.3	0.2178	2.3	0.98	1270.2	26.1	1333.5	17.3	1436.6	9.7	1436.6	9.7	88.4
08KH24-63	255	41840	2	17.5132	2.1	0.6022	2.5	0.0765	1.4	0.55	475.2	6.3	478.6	9.6	495.4	46.2	475.2	6.3	95.9
08KH24-64	2139	1128313	1.5	14.9917	0.9	1.1609	3.2	0.1262	3.1	0.96	766.3	22.3	782.4	17.5	828.5	18.5	766.3	22.3	92.5
08KH24-65	1214	451065	10	13.0392	0.3	1.8794	1	0.1777	0.9	0.94	1054.6	8.9	1073.9	6.4	1113.2	6.4	1113.2	6.4	94.7
08KH24-66	369	107928	1.8	13.7772	0.5	1.5916	1.6	0.159	1.6	0.96	951.4	13.9	966.9	10.2	1002.3	9.5	951.4	13.9	94.9
08KH24-67	301	69208	6	16.3387	3.3	0.5051	7.6	0.0599	6.8	0.9	374.8	24.9	415.2	25.9	646.4	71.9	374.8	24.9	NA
08KH24-68	232	39686	1.5	13.1679	1.1	1.8229	1.5	0.1741	1	0.67	1034.6	9.5	1053.7	9.7	1093.6	21.9	1093.6	21.9	94.6
08KH24-69	1055	30188	1.3	17.3649	2.5	0.5982	5.2	0.0753	4.5	0.88	468.3	20.5	476.1	19.6	514.1	54	468.3	20.5	91.1
08KH24-71	128	23959	1.5	17.5739	5.4	0.6	6	0.0765	2.4	0.4	475	11	477.2	22.7	487.7	120.3	475	11	97.4
08KH24-72	597	94135	29.8	16.8588	2.5	0.5594	6.4	0.0684	5.8	0.92	426.5	24.1	451.1	23.1	578.7	54.2	426.5	24.1	73.7
08KH24-73	243	86348	1.3	17.0113	3.8	0.5745	5.3	0.0709	3.7	0.7	441.4	15.9	460.9	19.6	559.1	82.1	441.4	15.9	78.9
08KH24-74	294	73551	1	17.5304	2.5	0.629	3.8	0.08	2.9	0.77	495.9	14	495.4	15	493.2	54.2	495.9	14	100.6
08KH24-75	124	60226	2.1	13.667	1.9	1.7101	2.3	0.1695	1.2	0.53	1009.4	11.2	1012.3	14.5	1018.6	38.7	1018.6	38.7	99.1
08KH24-76	448	2165	112.2	7.9087	167	0.0225	168.8	0.0013	24.2	0.14	8.3	2	22.5	37.7	2049.1	33.4	8.3	2	NA
08KH24-77	192	80905	1.6	15.0012	1.5	1.2051	1.8	0.1311	1.1	0.6	794.2	8.3	802.9	10.3	827.2	30.8	794.2	8.3	96
08KH24-79	717	96633	2.1	17.5121	1.2	0.6327	2.3	0.0804	2	0.85	498.3	9.4	497.8	9	495.5	26.5	498.3	9.4	100.6
08KH24-80	557	102668	2.7	17.2927	1.2	0.6158	3.1	0.0772	2.8	0.92	479.6	12.9	487.2	11.8	523.2	26.9	479.6	12.9	91.7
08KH24-81	910	231651	4	17.3231	0.9	0.6118	1.4	0.0769	1.2	0.8	477.4	5.3	484.7	5.6	519.4	19	477.4	5.3	91.9
08KH24-83	513	141059	2.9	14.9364	0.5	1.1896	2	0.1289	1.9	0.97	781.4	13.9	795.8	10.8	836.2	9.7	781.4	13.9	93.4
08KH24-84	256	89914	2.2	15.0281	0.8	1.2193	1.9	0.1329	1.7	0.91	804.4	12.9	809.5	10.5	823.5	16.6	804.4	12.9	97.7
08KH24-85	1020	25611	2.1	17.4116	1.3	0.529	6.3	0.0668	6.2	0.98	416.9	24.9	431.2	22.1	508.2	28	416.9	24.9	82
08KH24-86	401	134027	1.9	17.6141	2.4	0.4798	3	0.0613	1.8	0.59	383.5	6.6	397.9	9.9	482.7	53.7	383.5	6.6	NA
08KH24-87	128	48693	2.2	13.7564	1.1	1.524	4.6	0.1521	4.5	0.97	912.4	38	940.1	28.3	1005.4	23.3	912.4	38	90.8
08KH24-88	1512	402977	8.7	17.3268	0.2	0.6312	2.1	0.0793	2.1	0.99	492.1	10.1	496.8	8.4	518.9	5.4	492.1	10.1	94.8
08KH24-89	599	12206	6.1	22.6706	19.1	0.038	19.3	0.0063	2.8	0.15	40.2	1.1	37.9	7.2	-104.5	473.9	40.2	1.1	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 7)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
08KH24-90	933	768072	21.3	15.1214	0.4	1.1233	1.9	0.1232	1.9	0.98	748.9	13.3	764.6	10.4	810.5	8.8	748.9	13.3	92.4
08KH24-91	242	61554	1.2	17.5738	3.5	0.5881	4.2	0.075	2.3	0.54	465.9	10.2	469.6	15.8	487.8	78.2	465.9	10.2	95.5
08KH24-92	595	114579	3.8	17.4327	0.8	0.6052	2.6	0.0765	2.5	0.95	475.3	11.4	480.6	9.9	505.5	17.1	475.3	11.4	94
08KH24-93	275	48125	1	17.6718	2.3	0.5873	3.8	0.0753	3.1	0.81	467.8	14	469.1	14.4	475.5	49.8	467.8	14	98.4
08KH24-94	404	81590	2.3	17.4705	1.3	0.5625	4.7	0.0713	4.5	0.96	443.8	19.4	453.1	17.2	500.8	27.8	443.8	19.4	88.6
08KH24-95	214	40670	1	17.6809	2.9	0.5939	3.1	0.0762	1	0.32	473.2	4.6	473.4	11.8	474.4	65.1	473.2	4.6	99.7
08KH24-96	245	8797	32.2	17.4406	33.8	0.0343	37.2	0.0043	15.5	0.42	27.9	4.3	34.3	12.5	504.5	763.4	27.9	4.3	NA
08KH24-97	493	288847	2.2	13.5962	0.6	1.6735	5.2	0.165	5.2	0.99	984.6	47.1	998.5	33.1	1029.1	13.1	1029.1	13.1	95.7
08KH24-98	247	64372	2.1	15.1488	1.6	1.1996	2	0.1318	1.2	0.6	798.1	9	800.4	11	806.7	33.4	798.1	9	98.9
08KH24-99	881	110234	1.4	17.6094	0.8	0.5947	1.1	0.076	0.8	0.72	471.9	3.5	473.9	4.1	483.3	16.7	471.9	3.5	97.6
08KH24-100	665	199009	4.1	15.6684	0.8	0.6873	32.3	0.0781	32.2	1	484.8	150.6	531.2	134.2	735.8	16.2	484.8	150.6	65.9

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 10)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
PFS-1	138	39971	0.8	17.307	4.4	0.6163	5	0.0774	2.3	0.47	480.4	10.8	487.6	19.2	521.4	96	480.4	10.8	92.1
PFS-2	200	64045	1.5	13.7131	0.7	1.5093	3.7	0.1501	3.7	0.98	901.6	30.9	934.2	22.9	1011.8	14.5	901.6	30.9	89.1
PFS-3	999	224194	4.1	17.4037	0.8	0.5997	2.2	0.0757	2.1	0.93	470.4	9.5	477	8.5	509.2	18.1	470.4	9.5	92.4
PFS-4	240	16541	1.5	13.7648	3.3	1.3583	7.9	0.1356	7.2	0.91	819.7	55	871.1	46.1	1004.2	66.9	819.7	55	81.6
PFS-5	330	83099	1	17.6791	1.8	0.5894	2.7	0.0756	2	0.74	469.6	8.9	470.5	10	474.6	39.8	469.6	8.9	98.9
PFS-6	306	316897	2.5	12.9431	0.6	1.8235	1.8	0.1712	1.7	0.95	1018.6	16	1053.9	11.7	1128	11.2	1128	11.2	90.3
PFS-7	787	602876	2.3	17.4554	0.6	0.6415	1.4	0.0812	1.2	0.91	503.3	6	503.2	5.4	502.7	12.2	503.3	6	100.1
PFS-8	361	165028	2.1	9.694	0.6	3.9841	2.8	0.2801	2.7	0.98	1591.9	38.2	1631	22.5	1681.7	10.9	1681.7	10.9	94.7
PFS-9	496	47174	30	17.3538	2.3	0.1252	6.5	0.0158	6.1	0.94	100.8	6.1	119.7	7.3	515.5	50.2	100.8	6.1	NA
PFS-10	184	4557	1.5	25.2745	34.3	0.0477	34.6	0.0087	4.8	0.14	56.1	2.7	47.3	16	-379.2	913.5	56.1	2.7	NA
PFS-11	139	72402	1.4	13.6745	2.1	1.6999	3.6	0.1686	2.9	0.82	1004.3	27.4	1008.5	23.1	1017.5	42.3	1017.5	42.3	98.7
PFS-12	69	81178	0.9	11.9834	2.7	2.5144	3.2	0.2185	1.8	0.56	1274.1	21.1	1276.2	23.6	1279.7	52.4	1279.7	52.4	99.6
PFS-13	1109	5871	1	17.2167	1.5	0.5385	6.7	0.0672	6.5	0.97	419.5	26.3	437.4	23.7	532.9	33.1	419.5	26.3	78.7
PFS-14	295	22722	1.2	17.7194	3.2	0.359	4.7	0.0461	3.4	0.73	290.8	9.8	311.5	12.6	469.5	71.2	290.8	9.8	NA
PFS-15	114	32265	1.1	17.9895	9.3	0.5581	11.1	0.0728	5.9	0.54	453.1	26	450.3	40.2	435.9	208.1	453.1	26	103.9
PFS-16	194	20909	1.7	20.4884	10	0.2305	10.5	0.0342	2.9	0.28	217.1	6.3	210.6	19.9	138.6	236.3	217.1	6.3	NA
PFS-18	76	177643	0.9	9.8661	1.3	3.8714	2.6	0.277	2.3	0.87	1576.3	32.1	1607.7	21.4	1649.1	24.6	1649.1	24.6	95.6
PFS-19	387	30389	1.7	13.7358	1	1.6239	1.5	0.1618	1.1	0.73	966.6	9.9	979.5	9.5	1008.4	21	966.6	9.9	95.9
PFS-21	5033	17488	54.1	21.999	15.1	0.0067	15.6	0.0011	3.8	0.25	6.9	0.3	6.8	1.1	-31.1	368.7	6.9	0.3	NA
PFS-22	468	90578	1.9	17.3793	0.6	0.6376	1.1	0.0804	0.9	0.82	498.3	4.4	500.8	4.4	512.3	14	498.3	4.4	97.3
PFS-23	991	244413	1.8	10.4092	0.1	3.3539	2.5	0.2532	2.5	1	1455	31.9	1493.7	19.2	1549.1	1.9	1549.1	1.9	93.9
PFS-25	454	34049	1.7	17.4908	1.9	0.5018	3.5	0.0637	3	0.85	397.8	11.5	412.9	11.9	498.2	41.1	397.8	11.5	NA
PFS-26	154	11889	1.2	9.7753	1.6	3.8663	2.4	0.2741	1.9	0.77	1561.6	26	1606.7	19.7	1666.2	29.1	1666.2	29.1	93.7
PFS-27	271	50977	0.6	18.0645	3.2	0.5892	4.6	0.0772	3.3	0.72	479.3	15.1	470.3	17.1	426.7	70.6	479.3	15.1	112.3
PFS-28	175	56216	1.6	13.699	1.3	1.5123	2.4	0.1503	2	0.83	902.4	16.7	935.4	14.6	1013.9	26.7	902.4	16.7	89
PFS-29	477	145253	1	17.4945	1.2	0.6062	3.8	0.0769	3.7	0.95	477.7	16.8	481.2	14.7	497.7	26	477.7	16.8	96

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 10)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma) 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
PFS-30	48	21576	0.6	12.8792	3.8	2.101	4.1	0.1963	1.6	0.39	1155.1	17.1	1149.1	28.3	1137.8	75.1	1137.8	75.1	101.5
PFS-31	76	25389	1.7	13.957	3.4	1.5918	3.9	0.1611	2	0.5	963.1	17.5	967	24.3	976	68.6	963.1	17.5	98.7
PFS-32	377	52746	0.8	11.2016	0.6	2.4981	5.9	0.2029	5.9	1	1191.1	64.2	1271.5	43	1410	11.2	1410	11.2	84.5
PFS-33	721	61213	1	16.9779	5.1	0.5877	5.6	0.0724	2.5	0.44	450.4	10.7	469.4	21.2	563.4	110.5	450.4	10.7	79.9
PFS-34	336	81579	1.1	17.7072	1.7	0.6141	3.3	0.0789	2.8	0.85	489.3	13	486.1	12.6	471.1	38.4	489.3	13	103.9
PFS-35	700	54662	24.4	16.7558	1.5	0.6371	2.2	0.0774	1.6	0.73	480.7	7.5	500.5	8.8	592	33.1	480.7	7.5	81.2
PFS-36	68	2059	1.3	20.3229	54.2	0.0844	54.8	0.0124	8.2	0.15	79.7	6.5	82.3	43.3	157.6	1363.7	79.7	6.5	NA
PFS-37	928	104714	2.5	16.8378	5.2	0.4413	17.6	0.0539	16.9	0.96	338.4	55.6	371.2	54.9	581.4	112.1	338.4	55.6	NA
PFS-38	725	97305	1.5	17.4633	1.4	0.599	2.5	0.0759	2.1	0.84	471.4	9.5	476.6	9.5	501.7	30.2	471.4	9.5	94
PFS-39	740	234446	1.4	17.2749	0.8	0.6173	3.8	0.0773	3.7	0.98	480.2	16.9	488.1	14.5	525.5	18	480.2	16.9	91.4
PFS-40	276	70512	1.1	17.3388	2.2	0.6032	4	0.0759	3.3	0.83	471.3	14.9	479.3	15.1	517.4	48.6	471.3	14.9	91.1
PFS-41	683	91840	1.3	17.5353	1.2	0.6029	1.8	0.0767	1.4	0.77	476.3	6.4	479.1	6.9	492.6	25.6	476.3	6.4	96.7
PFS-42	821	617929	0.7	9.9547	0.2	3.7564	1.1	0.2712	1.1	0.98	1546.9	15.4	1583.5	9.2	1632.5	4.3	1632.5	4.3	94.8
PFS-44	111	56411	1.7	13.6753	1.7	1.58	2.4	0.1567	1.7	0.72	938.5	14.9	962.4	14.8	1017.4	33.7	938.5	14.9	92.2
PFS-45	240	96194	1.4	15.143	1.4	0.906	9.2	0.0995	9.1	0.99	611.5	52.9	654.9	44.3	807.5	29.9	611.5	52.9	75.7
PFS-46	220	52486	0.9	17.5425	2.8	0.586	3.6	0.0746	2.3	0.63	463.5	10.2	468.3	13.5	491.7	61.5	463.5	10.2	94.3
PFS-47	83	36764	0.9	10.2545	1.3	3.38	3.8	0.2514	3.6	0.94	1445.6	46.1	1499.8	29.7	1577.2	24.6	1577.2	24.6	91.7
PFS-48	108	18329	0.9	17.8176	4.9	0.5887	5.8	0.0761	3.1	0.54	472.6	14.1	470	21.7	457.3	107.9	472.6	14.1	103.4
PFS-49	824	138921	2.2	17.4811	1.2	0.6043	1.6	0.0766	1.1	0.68	475.9	5	480	6.1	499.4	26	475.9	5	95.3
PFS-50	573	117081	1.9	15.9994	4.7	0.8078	5.4	0.0937	2.6	0.49	577.6	14.5	601.2	24.5	691.3	100.5	577.6	14.5	83.5
PFS-51	3315	104749	2.9	17.4673	0.4	0.423	29.1	0.0536	29.1	1	336.5	95.3	358.2	87.9	501.2	7.8	336.5	95.3	NA
PFS-52	48	1786	1.1	13.9137	51.4	0.0891	54.8	0.009	18.9	0.34	57.7	10.8	86.6	45.5	982.3	1124.5	57.7	10.8	NA
PFS-54	506	163249	3.6	15.206	0.6	1.0287	1.2	0.1135	1.1	0.88	692.8	7.2	718.3	6.4	798.8	12.5	692.8	7.2	86.7
PFS-57	306	47949	1.2	17.825	1.2	0.612	2.4	0.0791	2	0.86	490.9	9.5	484.8	9.1	456.4	27.1	490.9	9.5	107.6
PFS-59	141	84276	1	10.0209	0.8	3.8503	3.1	0.2798	3	0.96	1590.5	41.7	1603.3	24.7	1620.2	15.1	1620.2	15.1	98.2
PFS-60	409	492	11	3.3948	118	0.0212	121.6	0.0005	28.9	0.24	3.4	1	21.3	25.6	3441.9	1082.2	3.4	1	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 10)

				Isotope ratios							Apparent ages (Ma)								
Grain	U (ppm)	206Pb	U/Th	206Pb*	±	207Pb*	±	206Pb*	±	error corr.	206Pb*	±	207Pb*	±	206Pb*	±	Best age (Ma)	± (Ma)	Conc (Ma)
		204Pb		207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
PFS-61	586	80279	2.6	17.5116	1.8	0.3481	3.6	0.0442	3.2	0.88	278.9	8.7	303.3	9.5	495.6	38.6	278.9	8.7	NA
PFS-62	387	180570	1.4	17.5678	2.7	0.5986	6.8	0.0763	6.3	0.92	473.9	28.6	476.4	26	488.5	60.5	473.9	28.6	97
PFS-63	62	53043	1.7	9.9482	2.1	3.2549	8.6	0.2348	8.3	0.97	1359.8	101.8	1470.3	66.6	1633.7	39.2	1633.7	39.2	83.2
PFS-64	2191	69472	1.9	17.3594	1.8	0.3036	7	0.0382	6.8	0.97	241.8	16.1	269.2	16.6	514.8	39.5	241.8	16.1	NA
PFS-65	156	25765	1.6	17.0901	4.3	0.6132	4.7	0.076	1.9	0.41	472.2	8.7	485.6	18.2	549.1	94.4	472.2	8.7	86
PFS-66	126	25128	0.9	18.2063	4.8	0.5902	5	0.0779	1.6	0.32	483.7	7.4	471	18.9	409.2	106.4	483.7	7.4	118.2
PFS-67	221	5292	535.8	27.009	32.5	0.0524	32.9	0.0103	5.1	0.16	65.8	3.4	51.8	16.6	-554.7	894	65.8	3.4	NA
PFS-72	482	83093	1.4	13.8103	0.7	1.3867	2.3	0.1389	2.2	0.96	838.4	17	883.3	13.4	997.5	13.2	838.4	17	84.1
PFS-74	289	20432	1.6	17.2478	2.7	0.5592	4.2	0.0699	3.2	0.77	435.8	13.6	451	15.3	529	58.6	435.8	13.6	82.4
PFS-75	64	4345	1.3	11.8761	4.4	2.2672	9.9	0.1953	8.9	0.9	1149.9	93.3	1202.1	69.8	1297.2	85.8	1297.2	85.8	88.6
PFS-76	65	1124	2	15.4552	20.4	0.5543	21.4	0.0621	6.5	0.3	388.6	24.4	447.8	77.5	764.7	433.3	388.6	24.4	NA
PFS-77	553	19110	2.8	20.3861	13.8	0.0497	14.1	0.0073	3.2	0.22	47.2	1.5	49.2	6.8	150.3	323.9	47.2	1.5	NA
PFS-79	1135	10743	11.7	12.7884	17.1	0.0743	21.3	0.0069	12.7	0.6	44.2	5.6	72.7	15	1151.8	342.1	44.2	5.6	NA
PFS-80	1135	538501	1.1	17.4589	0.7	0.6317	1.8	0.08	1.7	0.92	496.1	8	497.2	7.1	502.2	15.9	496.1	8	98.8
PFS-81	2637	192031	9.4	17.8572	1	0.2746	26.2	0.0356	26.2	1	225.3	58	246.4	57.4	452.3	21.5	225.3	58	NA
PFS-82	425	44884	2.5	17.3298	1.4	0.5459	5.3	0.0686	5.2	0.97	427.8	21.3	442.3	19.1	518.5	30.6	427.8	21.3	82.5
PFS-83	2954	174485	1.3	17.397	0.3	0.6118	1.5	0.0772	1.5	0.98	479.4	6.8	484.7	5.8	510.1	6.6	479.4	6.8	94
PFS-84	1082	877563	2.4	9.468	0.2	4.1745	1.5	0.2867	1.5	0.99	1624.8	21.8	1669	12.6	1725.1	4.4	1725.1	4.4	94.2
PFS-85	350	8912	2.4	21.2133	13.2	0.0507	13.3	0.0078	2.2	0.16	50.1	1.1	50.2	6.5	56.3	314.8	50.1	1.1	NA
PFS-86	148	15219	1.3	13.419	3	1.6151	6.2	0.1572	5.5	0.88	941.1	47.8	976.1	39	1055.6	60	941.1	47.8	89.2
PFS-87	1531	94218	2.3	13.8522	0.2	1.2771	1.8	0.1283	1.8	1	778.2	13.5	835.6	10.5	991.3	3.6	778.2	13.5	78.5
PFS-88	527	319357	1.4	11.9114	0.3	2.395	2.8	0.2069	2.8	1	1212.3	31.1	1241.1	20.2	1291.4	5.2	1291.4	5.2	93.9
PFS-89	389	358436	2.6	10.5237	1.5	2.4489	11.4	0.1869	11.3	0.99	1104.7	115.2	1257.1	82.6	1528.5	27.6	1528.5	27.6	72.3
PFS-90	839	78144	1	17.5368	0.8	0.6045	1.9	0.0769	1.7	0.9	477.5	8	480.1	7.4	492.4	18.5	477.5	8	97
PFS-91	109	14867	2	17.0489	9.4	0.6308	10.8	0.078	5.4	0.5	484.2	25.1	496.6	42.5	554.3	204.9	484.2	25.1	87.3
PFS-92	736	34434	9.1	15.9097	2.2	0.7167	3.9	0.0827	3.2	0.82	512.2	15.5	548.7	16.3	703.3	47.3	512.2	15.5	72.8

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Megaflood @ 10)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±		206Pb*	±	207Pb*	±	206Pb*	±			
		204Pb		207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
PFS-93	3034	4368	6.1	17.7049	2.3	0.1821	40.2	0.0234	40.2	1	149	59.1	169.8	63	471.3	49.9	149	59.1	NA
PFS-94	128	30617	0.7	18.0377	5.4	0.604	5.6	0.079	1.6	0.29	490.3	7.7	479.8	21.5	430	119.7	490.3	7.7	114
PFS-95	110	111383	1.6	5.0112	0.4	12.9393	4.8	0.4703	4.8	1	2484.8	98.8	2675.2	45.4	2822.5	7	2822.5	7	88
PFS-96	121	39510	1	17.5287	5.7	0.6042	5.9	0.0768	1.3	0.22	477.1	6.1	479.9	22.6	493.4	126.8	477.1	6.1	96.7
PFS-97	170	39438	1.3	17.2316	2.6	0.6191	3.3	0.0774	2.1	0.63	480.4	9.7	489.3	12.9	531	56.2	480.4	9.7	90.5
PFS-98	761	165937	1.7	14.5546	1	0.7542	8.6	0.0796	8.5	0.99	493.8	40.4	570.7	37.4	889.9	21	493.8	40.4	55.5
PFS-100	1653	499929	2	17.3872	0.4	0.633	2.6	0.0798	2.6	0.99	495.1	12.4	498	10.4	511.3	8.9	495.1	12.4	96.8

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Namche Barwa Cirque @ 5)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±		206Pb*	±	207Pb*	±	206Pb*	±			
		204Pb		207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
NBO904-1	335	177234	8.3	14.4756	0.7	0.9228	3.1	0.0969	3	0.97	596.1	16.9	663.8	14.9	901.2	14.9	596.1	16.9	66.2
NBO904-2	491	103314	0.8	17.4319	1.3	0.4542	2.7	0.0574	2.3	0.87	359.9	8.1	380.2	8.4	505.6	28.4	359.9	8.1	NA
NBO904-3	414	6320	12.5	23.1959	33.7	0.0197	34	0.0033	4.7	0.14	21.3	1	19.8	6.7	-161.2	859	21.3	1	NA
NBO904-4	257	73279	1.6	17.209	3.4	0.4996	14.5	0.0624	14.1	0.97	389.9	53.3	411.4	49.1	533.9	74.1	389.9	53.3	NA
NBO904-5	1659	336316	14.6	15.5376	0.8	0.2784	14.6	0.0314	14.6	1	199.1	28.7	249.4	32.4	753.5	15.9	199.1	28.7	NA
NBO904-7	682	5983	29	15.5489	25.9	0.0131	27.5	0.0015	9.3	0.34	9.5	0.9	13.2	3.6	751.9	555.3	9.5	0.9	NA
NBO904-8	2881	40377	28.1	21.6689	3.6	0.0159	4.7	0.0025	3	0.64	16.1	0.5	16	0.7	5.4	86.9	16.1	0.5	NA
NBO904-9	391	219411	3.7	15.1146	1.2	0.9685	2.3	0.1062	2	0.85	650.4	12.2	687.7	11.5	811.5	25	650.4	12.2	80.2
NBO904-10	171	100046	1.8	17.4519	1.9	0.6438	3	0.0815	2.3	0.78	505	11.4	504.7	11.9	503.1	40.8	505	11.4	100.4
NBO904-11	598	11451	76.3	20.3802	14.2	0.0309	14.6	0.0046	3.5	0.24	29.4	1	30.9	4.5	151.1	333.3	29.4	1	NA
NBO904-12	91	46668	1.2	17.9326	4.5	0.6087	7.3	0.0792	5.8	0.79	491.2	27.2	482.8	28.1	443	100.9	491.2	27.2	110.9
NBO904-13	661	15741	276.8	20.4861	8.9	0.027	26.7	0.004	25.2	0.94	25.8	6.5	27.1	7.1	138.9	209.3	25.8	6.5	NA
NBO904-14	124	171570	3.2	9.1361	0.4	4.6986	4.4	0.3113	4.3	1	1747.3	66.3	1767	36.4	1790.4	7.5	1790.4	7.5	97.6
NBO904-15	471	249194	6.8	11.4401	0.4	2.2259	2.6	0.1847	2.5	0.99	1092.5	25.5	1189.2	18	1369.6	8	1369.6	8	79.8
NBO904-16	767	346792	14.2	14.6482	1.6	0.8324	4.1	0.0884	3.8	0.92	546.2	20	614.9	19.1	876.7	32.8	546.2	20	62.3
NBO904-17	176	115462	2.5	17.4745	2.7	0.6298	12	0.0798	11.7	0.97	495	55.7	496	47.1	500.3	58.9	495	55.7	98.9
NBO904-18	246	3015	16	29.531	41.1	0.0137	41.6	0.0029	6.6	0.16	18.9	1.3	13.9	5.7	-801.4	1207.5	18.9	1.3	NA
NBO904-19	824	26052	8.4	19.3264	4.2	0.0339	16.7	0.0047	16.1	0.97	30.5	4.9	33.8	5.6	274	96.7	30.5	4.9	NA
NBO904-20	318	635582	3.7	10.6429	1.1	2.515	4.9	0.1941	4.8	0.98	1143.7	50.2	1276.4	35.7	1507.3	20.2	1507.3	20.2	75.9
NBO904-21	369	335290	0.7	14.9877	0.8	1.2384	2.3	0.1346	2.1	0.94	814.1	16.4	818.1	12.8	829.1	15.9	814.1	16.4	98.2
NBO904-22	201	2499	5.3	32.0894	105	0.0118	105.9	0.0027	11.7	0.11	17.6	2.1	11.9	12.5	-1043.5	0	17.6	2.1	NA
NBO904-23	386	176261	2.6	15.1559	0.8	0.7103	4	0.0781	3.9	0.98	484.6	18.1	544.9	16.7	805.7	15.9	484.6	18.1	60.1
NBO904-25	199	66658	2.1	17.5935	1.6	0.6138	3.2	0.0783	2.7	0.86	486.1	12.8	486	12.2	485.3	35.2	486.1	12.8	100.2
NBO904-26	297	192044	1.3	15.0049	0.6	1.1794	1.8	0.1284	1.7	0.94	778.5	12.7	791.1	10.1	826.7	13	778.5	12.7	94.2
NBO904-27	342	420759	1.1	14.1049	0.6	1.5186	1.8	0.1553	1.7	0.95	930.9	14.4	937.9	10.8	954.4	11.7	930.9	14.4	97.5
NBO904-28	115	40704	1.2	17.4091	2.7	0.4976	5.8	0.0628	5.2	0.89	392.8	19.8	410.1	19.7	508.5	58.6	392.8	19.8	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Namche Barwa Cirque @ 5)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma) 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
NBO904-29	169	41471	1.9	17.66	2.8	0.6307	4.1	0.0808	3	0.74	500.8	14.6	496.5	16.1	476.9	61.3	500.8	14.6	105
NBO904-30	452	3281	15.5	18.4595	33.1	0.0113	33.4	0.0015	4.8	0.14	9.7	0.5	11.4	3.8	378.2	762.5	9.7	0.5	NA
NBO904-31	367	313770	0.5	12.2863	0.3	2.2528	1.5	0.2007	1.5	0.98	1179.3	15.8	1197.7	10.5	1230.9	5.9	1230.9	5.9	95.8
NBO904-32	89	33953	2.2	15.1537	3.6	1.1509	6.8	0.1265	5.8	0.85	767.8	42.3	777.7	37.2	806.1	74.7	767.8	42.3	95.3
NBO904-33	67	32565	1.7	14.8623	1.3	1.2304	1.9	0.1326	1.4	0.72	802.8	10.4	814.5	10.7	846.6	27.5	802.8	10.4	94.8
NBO904-34	713	263521	3	17.3644	0.9	0.4796	3.1	0.0604	3	0.96	378.1	10.9	397.8	10.2	514.2	19.1	378.1	10.9	NA
NBO904-35	312	122241	1	17.4474	0.8	0.6436	3.4	0.0814	3.3	0.97	504.7	15.9	504.5	13.5	503.7	18.4	504.7	15.9	100.2
NBO904-36	365	105737	2.2	17.3981	1	0.5948	3	0.0751	2.8	0.94	466.5	12.5	473.9	11.2	509.9	22.5	466.5	12.5	91.5
NBO904-37	467	377673	2.5	14.9875	0.3	1.1456	3.2	0.1245	3.2	0.99	756.5	23	775.1	17.5	829.1	7.1	756.5	23	91.3
NBO904-38	374	236727	1	17.3669	1	0.6106	2	0.0769	1.8	0.86	477.6	8.1	483.9	7.9	513.8	22.7	477.6	8.1	93
NBO904-39	659	604876	10	17.4678	0.8	0.6015	1.5	0.0762	1.3	0.86	473.4	5.8	478.2	5.7	501.1	17	473.4	5.8	94.5
NBO904-40	928	21512	73.8	22.5905	9.5	0.0245	10.6	0.004	4.9	0.46	25.8	1.3	24.6	2.6	-95.8	233.1	25.8	1.3	NA
NBO904-41	901	256263	3.5	15.0077	0.3	0.6878	3	0.0749	3	1	465.4	13.3	531.5	12.3	826.3	6	465.4	13.3	56.3
NBO904-42	280	31449	1.5	19.8375	11.5	0.0998	11.8	0.0144	2.5	0.21	91.9	2.3	96.6	10.9	213.9	267.2	91.9	2.3	NA
NBO904-43	2899	50288	0.6	17.4409	0.5	0.2937	29.8	0.0371	29.8	1	235.1	68.7	261.4	68.7	504.5	10	235.1	68.7	NA
NBO904-45	268	135256	1.7	14.8515	1	1.2735	4.4	0.1372	4.2	0.97	828.6	33	833.9	24.9	848.1	21.4	828.6	33	97.7
NBO904-47	376	175365	2.9	15.099	0.5	0.9743	6.2	0.1067	6.2	1	653.5	38.6	690.7	31.3	813.7	11.4	653.5	38.6	80.3
NBO904-48	490	154979	4.7	17.4745	0.9	0.5301	4.4	0.0672	4.3	0.98	419.1	17.4	431.9	15.4	500.3	19.5	419.1	17.4	83.8
NBO904-49	943	194205	79.7	18.0565	1.6	0.085	5.6	0.0111	5.4	0.96	71.3	3.8	82.8	4.5	427.6	35.9	71.3	3.8	NA
NBO904-50	301	303357	1.4	13.6375	0.6	1.626	2.3	0.1608	2.2	0.96	961.4	19.9	980.3	14.6	1023	13.1	961.4	19.9	94
NBO904-52	2070	511932	2.3	15.0308	0.2	1.0004	8.3	0.1091	8.3	1	667.2	52.6	704	42.2	823.1	4.5	667.2	52.6	81.1
NBO904-53	303	53532	4	15.475	1.8	0.2781	13.3	0.0312	13.2	0.99	198.1	25.8	249.1	29.5	762	37.1	198.1	25.8	NA
NBO904-54	153	33629	1	17.2104	1.7	0.49	5.8	0.0612	5.6	0.96	382.7	20.8	404.9	19.5	533.7	36.6	382.7	20.8	NA
NBO904-55	372	235456	0.8	12.0732	0.5	2.0947	3	0.1834	3	0.99	1085.6	29.6	1147.1	20.6	1265.1	9.1	1265.1	9.1	85.8
NBO904-56	492	303163	5.7	17.3455	0.6	0.6126	3.4	0.0771	3.4	0.98	478.6	15.5	485.2	13.2	516.5	13	478.6	15.5	92.6
NBO904-57	181	74654	1.5	17.5428	1.1	0.6527	3.2	0.083	3	0.94	514.2	14.8	510.1	12.8	491.7	24.2	514.2	14.8	104.6

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Namche Barwa Cirque @ 5)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
NBO904-58	58	109753	1	11.0804	1.1	2.9293	4.6	0.2354	4.5	0.97	1362.8	55.4	1389.5	35.1	1430.8	20.7	1430.8	20.7	95.2
NBO904-59	235	127530	6.1	15.1303	0.7	0.8805	4.4	0.0966	4.3	0.99	594.6	24.4	641.2	20.7	809.3	14.9	594.6	24.4	73.5
NBO904-60	238	123078	1.9	14.9846	1	1.1326	4.5	0.1231	4.3	0.97	748.3	30.7	769	24.1	829.5	21.3	748.3	30.7	90.2
NBO904-61	97	298	38.2	2.842	200	0.0439	204.5	0.0009	42.6	0.21	5.8	2.5	43.7	87.6	3715.1	957.6	5.8	2.5	NA
NBO904-62	1294	549993	0.8	17.3518	0.2	0.5866	3.6	0.0738	3.6	1	459.2	15.8	468.7	13.4	515.7	5.1	459.2	15.8	89
NBO904-63	147	112141	1.7	14.9466	1.2	1.1315	2.7	0.1227	2.4	0.89	745.9	17.1	768.5	14.7	834.8	26	745.9	17.1	89.3
NBO904-64	308	334807	1.1	9.5846	0.5	3.851	2.8	0.2677	2.7	0.98	1529.1	37.1	1603.5	22.3	1702.6	9.3	1702.6	9.3	89.8
NBO904-65	175	82409	1.6	17.3883	1.9	0.5563	4.5	0.0702	4.1	0.91	437.1	17.2	449.1	16.3	511.1	42	437.1	17.2	85.5
NBO904-67	727	374545	1.9	17.4013	0.6	0.6152	1.6	0.0776	1.5	0.94	482	7	486.8	6.2	509.5	12.3	482	7	94.6
NBO904-68	220	86352	1.3	17.2333	2.4	0.4905	4.2	0.0613	3.4	0.82	383.6	12.7	405.3	14	530.8	53.1	383.6	12.7	NA
NBO904-69	2898	225109	8.1	17.3137	0.1	0.7551	5.5	0.0948	5.5	1	583.9	30.9	571.2	24.2	520.6	3.1	583.9	30.9	112.2
NBO904-70	349	10215	15.5	18.7254	25.7	0.0191	26.9	0.0026	7.8	0.29	16.7	1.3	19.2	5.1	346	590.5	16.7	1.3	NA
NBO904-72	1665	251794	3.7	17.4166	0.6	0.4549	3.2	0.0575	3.1	0.98	360.1	10.9	380.7	10.1	507.5	12.6	360.1	10.9	NA
NBO904-73	283	497776	2.6	12.4353	0.5	1.6475	7	0.1486	6.9	1	893.1	58	988.6	44.1	1207.2	10.5	1207.2	10.5	74
NBO904-74	1576	75403	40.8	16.6894	0.4	0.4554	5.7	0.0551	5.7	1	345.9	19.2	381	18.2	600.6	9.6	345.9	19.2	NA
NBO904-75	1000	20858	18.9	21.5008	12.8	0.0252	13.3	0.0039	3.7	0.28	25.3	0.9	25.3	3.3	24.1	307.4	25.3	0.9	NA
NBO904-76	65	48529	2.6	17.4031	4.4	0.6667	4.9	0.0842	2.2	0.45	520.9	11.1	518.7	20	509.3	96.9	520.9	11.1	102.3
NBO904-77	288	41002	5.8	17.8192	2.9	0.2668	5.6	0.0345	4.8	0.86	218.6	10.4	240.2	12.1	457.1	64.8	218.6	10.4	NA
NBO904-78	239	179237	1.6	14.9322	0.7	1.2208	1.7	0.1322	1.5	0.9	800.4	11.6	810.1	9.5	836.8	15.1	800.4	11.6	95.7
NBO904-79	388	714626	11.4	10.0911	1.4	3.1538	5.7	0.2308	5.5	0.97	1338.8	66.4	1445.9	43.7	1607.2	26	1607.2	26	83.3
NBO904-81	332	3869	69.1	25.6698	26.3	0.021	26.9	0.0039	5.4	0.2	25.2	1.4	21.1	5.6	-419.7	699.1	25.2	1.4	NA
NBO904-82	436	300951	3.6	10.7709	3.3	2.8391	6.2	0.2218	5.3	0.85	1291.3	61.7	1365.9	46.6	1484.7	61.7	1484.7	61.7	87
NBO904-83	628	298024	0.9	14.9134	0.4	1.0182	3.2	0.1101	3.2	0.99	673.5	20.5	713	16.5	839.4	7.6	673.5	20.5	80.2
NBO904-84	960	482054	1.4	17.4515	0.6	0.6177	2.2	0.0782	2.2	0.97	485.3	10.1	488.4	8.6	503.2	12.3	485.3	10.1	96.4
NBO904-85	106	41687	1.7	17.4957	4.2	0.606	5.1	0.0769	2.9	0.57	477.6	13.4	481.1	19.5	497.6	92.1	477.6	13.4	96
NBO904-86	2564	37082	38.2	21.189	3.9	0.021	4.7	0.0032	2.6	0.56	20.8	0.5	21.1	1	59.1	93.5	20.8	0.5	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Namche Barwa Cirque @ 5)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
NBO904-87	302	111439	2.8	17.2586	1.4	0.6211	4.7	0.0777	4.5	0.95	482.7	20.9	490.6	18.3	527.6	31	482.7	20.9	91.5
NBO904-88	359	179692	0.7	17.4008	0.9	0.582	4.4	0.0735	4.3	0.98	456.9	19.1	465.8	16.6	509.6	20.7	456.9	19.1	89.7
NBO904-89	31	30416	0.7	13.8522	3.9	1.5595	4.5	0.1567	2.2	0.49	938.3	19.4	954.3	28	991.3	80.1	938.3	19.4	94.6
NBO904-90	745	616885	3.8	11.7225	0.5	2.0629	2.7	0.1754	2.7	0.98	1041.7	25.7	1136.6	18.6	1322.5	9.6	1322.5	9.6	78.8
NBO904-91	2832	467238	28.6	17.1475	3.3	0.2336	6.6	0.0291	5.7	0.87	184.6	10.4	213.2	12.7	541.7	72.3	184.6	10.4	NA
NBO904-92	791	296867	12	15.2519	2.5	0.7536	3.7	0.0834	2.8	0.74	516.1	13.7	570.3	16.3	792.5	52.8	516.1	13.7	65.1
NBO904-93	131	59407	1.1	14.4236	2.8	0.6586	4.7	0.0689	3.8	0.81	429.5	15.9	513.8	19.1	908.6	57.2	429.5	15.9	47.3
NBO904-94	287	67818	1.6	14.9961	0.8	0.9342	5	0.1016	5	0.99	623.8	29.6	669.9	24.8	827.9	17.5	623.8	29.6	75.3
NBO904-95	502	90281	20.4	16.4435	2.1	0.1869	4.5	0.0223	4	0.89	142.1	5.7	174	7.3	632.7	44.6	142.1	5.7	NA
NBO904-96	1077	20997	29.2	23.4818	11.8	0.0177	11.9	0.003	1.4	0.12	19.4	0.3	17.8	2.1	-191.7	295.9	19.4	0.3	NA
NBO904-97	607	152828	4.4	17.3513	1.1	0.5079	3.4	0.0639	3.2	0.95	399.4	12.5	417	11.6	515.8	23.3	399.4	12.5	NA
NBO904-98	127	51119	2.1	15.6402	3.2	0.707	5.5	0.0802	4.4	0.81	497.3	21.3	543	23	739.6	67	497.3	21.3	67.2
NBO904-99	557	203526	1.5	17.4213	0.5	0.6412	4.3	0.081	4.2	0.99	502.2	20.5	503.1	16.9	507	11	502.2	20.5	99.1
NBO904-100	801	2912	57	19.8135	54.5	0.0064	55.1	0.0009	8	0.15	6	0.5	6.5	3.6	216.7	1360.8	6	0.5	NA
NBO904-101	649	472325	3.9	17.4188	0.9	0.5557	4.3	0.0702	4.2	0.98	437.4	17.9	448.7	15.7	507.3	20.8	437.4	17.9	86.2
NBO904-102	292	96273	1.6	17.4677	1	0.6424	2.3	0.0814	2.1	0.89	504.4	10	503.8	9.2	501.1	22.8	504.4	10	100.6
NBO904-103	760	387832	56.3	15.0268	0.4	0.8409	7.2	0.0916	7.2	1	565.2	39.1	619.6	33.6	823.7	7.7	565.2	39.1	68.6
NBO904-104	306	91106	1.3	14.9363	0.7	1.2078	1.4	0.1308	1.2	0.85	792.6	8.8	804.2	7.8	836.3	15.5	792.6	8.8	94.8
NBO904-106	794	441658	15.4	17.4276	0.4	0.5723	2.5	0.0723	2.5	0.99	450.2	10.7	459.5	9.2	506.2	9	450.2	10.7	88.9
NBO904-107	2907	47167	39.6	21.1003	3.2	0.0273	3.6	0.0042	1.7	0.46	26.9	0.4	27.4	1	69.1	76.6	26.9	0.4	NA
NBO904-108	627	11208	12.4	22.9395	13.9	0.0244	15.3	0.0041	6.4	0.42	26.2	1.7	24.5	3.7	-133.6	344	26.2	1.7	NA
NBO904-109	326	301917	1.3	14.0305	0.5	1.2709	3.8	0.1293	3.8	0.99	784	28.2	832.8	21.9	965.3	9.8	784	28.2	81.2
NBO904-110	412	72345	4.9	17.448	0.9	0.5019	5.7	0.0635	5.6	0.99	396.9	21.5	413	19.2	503.6	20.8	396.9	21.5	NA
NBO904-111	321	12377	3.2	15.6313	4	0.6603	6	0.0749	4.5	0.75	465.4	20.4	514.8	24.4	740.8	84.6	465.4	20.4	62.8

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Namche Barwa Cirque @ 5)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±		206Pb*	±	207Pb*	±	206Pb*	±			
		204Pb		207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
NBO904-112	2904	95425	44.7	21.461	2.4	0.0226	3.3	0.0035	2.2	0.67	22.6	0.5	22.7	0.7	28.6	57.7	22.6	0.5	NA
NBO904-113	351	570862	5.4	14.5644	0.7	1.171	9.3	0.1237	9.3	1	751.8	66	787.1	51.1	888.6	14.8	751.8	66	84.6
NBO904-114	170	82898	1.3	15.1157	1.3	1.1334	4.5	0.1243	4.3	0.96	755	30.7	769.4	24.3	811.4	27.7	755	30.7	93.1
NBO904-115	456	183222	1.2	17.4381	0.9	0.6171	2.3	0.078	2.1	0.92	484.5	9.7	488	8.7	504.8	18.8	484.5	9.7	96
NBO904-116	317	248317	1.7	13.8046	1.7	1.2946	6.9	0.1296	6.7	0.97	785.7	49.3	843.3	39.4	998.3	33.9	785.7	49.3	78.7
NBO904-117	811	118168	12.4	17.572	2	0.1812	8.2	0.0231	7.9	0.97	147.1	11.6	169.1	12.8	488	44.5	147.1	11.6	NA
NBO904-118	823	758446	3	15.0344	0.2	1.1626	2.4	0.1268	2.4	1	769.4	17.2	783.2	13	822.6	3.9	769.4	17.2	93.5
NBO904-119	326	60504	3.4	17.2955	2	0.3536	18.1	0.0444	18	0.99	279.8	49.3	307.4	48.1	522.9	43	279.8	49.3	NA
NBO904-120	209	132246	1.7	17.2213	1.4	0.6556	4.5	0.0819	4.3	0.95	507.3	21	511.9	18.2	532.3	30.4	507.3	21	95.3
NBO904-121	300	419193	1.8	14.9955	0.6	1.1528	3.3	0.1254	3.3	0.98	761.5	23.5	778.6	18.1	828	12.1	761.5	23.5	92
NBO904-122	2889	52060	65.5	21.5277	2.2	0.0245	3.5	0.0038	2.7	0.78	24.6	0.7	24.5	0.8	21.1	52.8	24.6	0.7	NA
NBO904-123	467	10964	14.1	21.2666	21.2	0.0218	21.6	0.0034	4.6	0.21	21.6	1	21.9	4.7	50.3	509.9	21.6	1	NA
NBO904-124	352	4334	83.5	22.1725	21.3	0.0235	26.4	0.0038	15.5	0.59	24.3	3.8	23.6	6.2	-50.2	524.1	24.3	3.8	NA
NBO904-125	36	289	54.5	4.5629	34.9	0.1528	46.6	0.0051	30.9	0.66	32.5	10	144.4	62.8	2974.5	582.8	32.5	10	NA
NBO904-126	177	59146	1.6	17.4958	1.6	0.6303	7.4	0.08	7.3	0.98	496	34.7	496.3	29.2	497.6	36	496	34.7	99.7
NBO904-127	564	4758	46	26.0702	45	0.007	45.8	0.0013	8.7	0.19	8.5	0.7	7.1	3.2	-460.4	1241.9	8.5	0.7	NA
NBO904-128	170	9672	1.9	14.8043	1.9	1.0996	2.8	0.1181	2.1	0.74	719.4	14.3	753.1	15	854.7	39.2	719.4	14.3	84.2
NBO904-129	1312	535899	20.7	15.4628	0.6	0.8068	11	0.0905	11	1	558.4	58.9	600.7	50	763.6	11.7	558.4	58.9	73.1
NBO904-130	212	52010	1.3	17.392	1.1	0.627	2.5	0.0791	2.2	0.89	490.7	10.5	494.2	9.7	510.7	24.6	490.7	10.5	96.1
NBO904-132	1145	193062	15.2	17.4909	0.9	0.246	8.2	0.0312	8.2	0.99	198.1	15.9	223.3	16.5	498.2	18.9	198.1	15.9	NA
NBO904-133	329	197285	1.2	14.9877	0.5	1.2555	3.6	0.1365	3.6	0.99	824.7	27.6	825.9	20.3	829.1	11.1	824.7	27.6	99.5
NBO904-134	2153	260115	6.1	17.4074	0.3	0.607	4.3	0.0766	4.2	1	476	19.5	481.7	16.3	508.7	5.6	476	19.5	93.6

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Namche Barwa Cirque @ 5)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±		206Pb*	±	207Pb*	±	206Pb*	±			
		204Pb		207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
NBO904-135	721	14059	43.3	19.4123	12.3	0.0179	12.6	0.0025	2.6	0.2	16.2	0.4	18	2.2	263.9	283.2	16.2	0.4	NA
NBO904-136	718	42102	2.4	17.7662	2.9	0.08	5.1	0.0103	4.1	0.82	66.1	2.7	78.1	3.8	463.7	64.5	66.1	2.7	NA
NBO904-137	205	74763	0.5	17.1555	1.2	0.6934	5.4	0.0863	5.3	0.98	533.5	27.2	534.9	22.6	540.7	26	533.5	27.2	98.7
NBO904-139	720	236044	10.5	17.35	0.5	0.5425	2.1	0.0683	2.1	0.97	425.7	8.6	440.1	7.6	516	10.6	425.7	8.6	82.5
NBO904-140	257	77983	1.2	17.2191	1.1	0.6279	4.1	0.0784	4	0.96	486.6	18.6	494.8	16.2	532.6	25.1	486.6	18.6	91.4

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 8)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
		204Pb		206Pb* / 207Pb*	± (%)	207Pb* / 235U*	± (%)	206Pb* / 238U	± (%)		206Pb* / 238U*	± (Ma)	207Pb* / 235U	± (Ma)	206Pb* / 207Pb*	± (Ma)			
03250816-1	218	574506	1.8	10.0555	0.6	2.9525	4	0.2153	4	0.99	1257.1	45.2	1395.5	30.3	1613.8	10.4	1613.8	10.4	77.9
03250816-2	730	1275720	1.4	12.8667	0.3	1.6141	2.7	0.1506	2.7	0.99	904.5	22.5	975.7	16.8	1139.7	5.7	1139.7	5.7	79.4
03250816-3	98	569	1.5	22.753	27.8	0.0557	29	0.0092	8.3	0.29	59	4.9	55	15.5	-113.5	696	59	4.9	NA
03250816-5	113	4629	3.3	23.7888	55.2	0.0327	56.5	0.0056	12	0.21	36.3	4.4	32.7	18.2	-224.3	1495.3	36.3	4.4	NA
03250816-6	326	181370	3.8	16.1327	1	0.9513	2.2	0.1113	2	0.91	680.3	13.1	678.8	11.1	673.6	20.4	680.3	13.1	101
03250816-7	355	905	1.4	19.7726	8.7	0.0576	11.7	0.0083	7.7	0.66	53.1	4.1	56.9	6.5	221.5	202.4	53.1	4.1	NA
03250816-8	273	12759	0.6	19.7626	16.9	0.0521	18.3	0.0075	6.9	0.38	47.9	3.3	51.5	9.2	222.7	394.4	47.9	3.3	NA
03250816-9	393	28842	3.1	12.0944	3.1	1.9853	5.4	0.1741	4.5	0.82	1034.9	42.9	1110.5	36.7	1261.7	60.1	1261.7	60.1	82
03250816-10	612	247566	3	12.1104	0.5	2.0891	2.8	0.1835	2.8	0.99	1086	28.1	1145.2	19.6	1259.2	9.3	1259.2	9.3	86.2
03250816-11	220	7349	1	20.6756	9.8	0.0703	10.4	0.0105	3.7	0.36	67.6	2.5	68.9	7	117.2	230.5	67.6	2.5	NA
03250816-12	157	10816	1.3	19.7589	15.1	0.0811	15.4	0.0116	3.3	0.22	74.5	2.5	79.2	11.7	223.1	350	74.5	2.5	NA
03250816-13	3152	1434162	1.9	20.4257	0.6	0.1707	2.3	0.0253	2.3	0.97	161	3.6	160	3.5	145.8	13.2	161	3.6	NA
03250816-15	359	22418	8	21.0758	10.9	0.0471	11.8	0.0072	4.5	0.38	46.2	2.1	46.7	5.4	71.8	259.5	46.2	2.1	NA
03250816-16	130	5527	1.2	20.6348	37.3	0.0409	39.6	0.0061	13.3	0.33	39.3	5.2	40.7	15.8	121.9	908.3	39.3	5.2	NA
03250816-17	175	53963	0.8	17.4971	1.4	0.6084	2	0.0772	1.5	0.74	479.4	6.8	482.6	7.7	497.4	29.9	479.4	6.8	96.4
03250816-18	114	30040	1.5	11.0268	5.2	3.1262	10.7	0.25	9.4	0.87	1438.5	121	1439.2	82.8	1440	100	1440	100	99.9
03250816-19	146	297965	2.8	10.2788	0.4	3.3273	3.4	0.248	3.4	0.99	1428.4	43.4	1487.5	26.6	1572.8	7.6	1572.8	7.6	90.8
03250816-20	234	95360	0.5	17.3844	1.7	0.6068	2.4	0.0765	1.7	0.7	475.3	7.6	481.6	9.1	511.7	37.1	475.3	7.6	92.9
03250816-21	31	21014	0.8	18.5314	10.4	0.5693	10.6	0.0765	2.1	0.19	475.3	9.4	457.5	39.1	369.5	234.8	475.3	9.4	128.6
03250816-22	73	72186	1	12.8859	1.4	2.0663	3.4	0.1931	3.1	0.91	1138.2	32.5	1137.7	23.5	1136.8	28.6	1136.8	28.6	100.1
03250816-23	274	58101	1.5	17.3881	2.1	0.5932	3.1	0.0748	2.2	0.72	465.1	9.8	472.9	11.6	511.2	47	465.1	9.8	91
03250816-24	370	31156	3.2	21.1432	12.1	0.0587	14.6	0.009	8.2	0.56	57.8	4.7	57.9	8.2	64.2	287.9	57.8	4.7	NA
03250816-25	895	19781	6	20.5111	8.3	0.0457	10.5	0.0068	6.4	0.61	43.7	2.8	45.4	4.6	136	196	43.7	2.8	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 8)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±		206Pb*	±	207Pb*	±	206Pb*	±			
		204Pb		207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
03250816-26	53	67676	1	9.8118	1.2	3.8637	1.8	0.275	1.3	0.75	1565.9	18.4	1606.1	14.2	1659.3	21.4	1659.3	21.4	94.4
03250816-27	77	132831	1.5	10.0396	0.9	3.719	1.8	0.2708	1.6	0.87	1544.9	21.9	1575.5	14.7	1616.7	16.9	1616.7	16.9	95.6
03250816-28	70	97651	1.7	10.0996	1.4	3.6573	2.2	0.2679	1.7	0.78	1530.1	23.6	1562.1	17.7	1605.6	25.9	1605.6	25.9	95.3
03250816-29	73	28610	1.3	15.2305	3.8	0.9008	5.4	0.0995	3.8	0.71	611.5	22.3	652.1	26	795.5	80.3	611.5	22.3	76.9
03250816-31	232	22787	0.3	22.7436	15.2	0.0708	15.5	0.0117	3.1	0.2	74.9	2.3	69.5	10.4	-112.4	376.1	74.9	2.3	NA
03250816-33	216	211011	0.5	17.4178	1.9	0.5977	3.1	0.0755	2.5	0.79	469.2	11.2	475.8	11.9	507.4	42.8	469.2	11.2	92.5
03250816-34	175	38539	1.8	14.961	1.7	1.2022	4.1	0.1304	3.7	0.91	790.4	27.6	801.6	22.7	832.8	36	790.4	27.6	94.9
03250816-36	334	22156	2.4	24.3202	14.3	0.0507	14.5	0.0089	2.3	0.16	57.4	1.3	50.2	7.1	-280.3	365.7	57.4	1.3	NA
03250816-37	78	23163	0.7	18.2806	5.7	0.5674	5.9	0.0752	1.6	0.28	467.6	7.4	456.4	21.7	400.1	127.5	467.6	7.4	116.9
03250816-38	67	38200	1.5	13.7576	2.8	1.6329	3.5	0.1629	2.1	0.59	973	18.8	983	22.2	1005.2	57.8	973	18.8	96.8
03250816-40	643	29832	0.7	21.7904	7.7	0.054	7.9	0.0085	1.5	0.18	54.7	0.8	53.4	4.1	-8	187.1	54.7	0.8	NA
03250816-41	290	29786	0.5	20.9003	5.2	0.1275	7.1	0.0193	4.8	0.67	123.4	5.8	121.8	8.1	91.7	123.6	123.4	5.8	NA
03250816-42	73	42996	0.9	17.8222	4	0.6224	6.4	0.0805	5	0.78	498.8	24	491.4	24.9	456.7	87.8	498.8	24	109.2
03250816-43	1341	82295	0.4	17.2807	0.9	0.3872	7.8	0.0485	7.8	0.99	305.5	23.2	332.4	22.2	524.8	19.3	305.5	23.2	NA
03250816-44	106	72731	2.1	12.9508	1.8	1.5132	5.1	0.1421	4.8	0.93	856.7	38.5	935.7	31.4	1126.7	36.8	856.7	38.5	76
03250816-46	1975	26040	2.9	21.1555	8.2	0.0138	8.6	0.0021	2.9	0.33	13.6	0.4	13.9	1.2	62.8	194.6	13.6	0.4	NA
03250816-47	963	912313	3.4	10.3712	0.1	3.5417	3.4	0.2664	3.4	1	1522.5	46.3	1536.6	27.1	1556	2.8	1556	2.8	97.9
03250816-48	342	95271	1.9	17.5979	0.9	0.5462	4.3	0.0697	4.2	0.98	434.5	17.8	442.5	15.5	484.8	20.3	434.5	17.8	89.6
03250816-49	209	78182	1	17.2454	1.3	0.634	2	0.0793	1.5	0.74	491.9	6.9	498.6	7.8	529.3	29.1	491.9	6.9	92.9
03250816-50	130	6496	0.4	20.9012	24.3	0.079	24.8	0.012	5.3	0.21	76.8	4	77.2	18.5	91.5	582.1	76.8	4	NA
03250816-51	196	110531	0.6	12.708	0.6	2.1627	4	0.1993	4	0.99	1171.7	42.3	1169.1	27.7	1164.3	11.3	1164.3	11.3	100.6
03250816-53	980	30968	1.5	17.564	0.9	0.3119	4.8	0.0397	4.7	0.98	251.1	11.6	275.6	11.6	489	19.6	251.1	11.6	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 8)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
3250816-54	200	15936	0.5	23.3838	12.6	0.0604	13.3	0.0102	4.1	0.31	65.7	2.7	59.6	7.7	-181.3	316.3	65.7	2.7	NA
3250816-56	83	75726	0.5	12.727	1.4	1.9758	2	0.1824	1.5	0.72	1080	14.6	1107.3	13.8	1161.4	28.2	1161.4	28.2	93
3250816-57	656	5714	1	21.275	10.8	0.0566	11	0.0087	2.1	0.19	56.1	1.2	55.9	6	49.4	259.5	56.1	1.2	NA
3250816-58	499	1077569	0.6	9.907	0.2	3.8771	1.7	0.2786	1.7	0.99	1584.2	23.3	1608.9	13.5	1641.4	3.3	1641.4	3.3	96.5
3250816-59	162	73266	1.3	13.2043	0.8	1.7882	2.2	0.1712	2	0.93	1019	18.9	1041.2	14.1	1088	16.3	1088	16.3	93.7
3250816-60	100	134799	0.9	10.1826	0.9	3.7323	3	0.2756	2.8	0.95	1569.4	39.4	1578.3	23.8	1590.3	16.7	1590.3	16.7	98.7
3250816-61	57	1876	0.8	20.6085	44.5	0.0509	47.2	0.0076	15.8	0.33	48.8	7.7	50.4	23.2	124.9	1096.7	48.8	7.7	NA
3250816-63	79	3976	1	23.259	50.3	0.0506	51.2	0.0085	9.3	0.18	54.8	5.1	50.1	25.1	-167.9	1329.4	54.8	5.1	NA
3250816-64	302	366461	14	16.3043	0.5	0.876	2	0.1036	1.9	0.97	635.4	11.4	638.8	9.2	651	10.5	635.4	11.4	97.6
3250816-65	256	9562	1.5	22.7491	19.5	0.0501	20.3	0.0083	5.9	0.29	53.1	3.1	49.7	9.8	-113	482.9	53.1	3.1	NA
3250816-66	347	134219	1.5	17.4088	1	0.605	1.4	0.0764	1	0.69	474.5	4.4	480.4	5.4	508.5	22.3	474.5	4.4	93.3
3250816-67	179	15472	1.5	21.0541	13.9	0.1177	14.1	0.018	2.6	0.18	114.8	3	113	15.1	74.3	331.8	114.8	3	NA
3250816-68	647	449091	0.7	10.081	0.2	3.88	1.3	0.2837	1.3	0.99	1609.9	18.2	1609.5	10.4	1609	2.9	1609	2.9	100.1
3250816-69	70	50310	1.2	13.8599	2.1	1.5545	2.6	0.1563	1.5	0.58	935.9	12.9	952.3	15.9	990.2	42.6	935.9	12.9	94.5
3250816-70	531	41313	0.5	20.9896	5.9	0.0762	6.7	0.0116	3.1	0.46	74.3	2.3	74.5	4.8	81.5	140.3	74.3	2.3	NA
3250816-71	155	25082	1.8	19.0985	8.3	0.3034	8.5	0.042	1.9	0.22	265.3	4.9	269	20.1	301.2	188.8	265.3	4.9	NA
3250816-72	1700	41825	2.6	21.1042	4.4	0.0415	5.7	0.0064	3.5	0.63	40.8	1.4	41.3	2.3	68.6	104.9	40.8	1.4	NA
3250816-73	68	29482	0.9	12.9045	1.2	1.6678	4.2	0.1561	4.1	0.96	935	35.4	996.4	26.9	1133.9	23.9	1133.9	23.9	82.5
3250816-74	46	37483	1.5	13.7204	2.4	1.6631	2.9	0.1655	1.7	0.58	987.2	15.3	994.6	18.4	1010.7	48	987.2	15.3	97.7
3250816-75	222	193230	3.4	13.7612	0.8	1.6432	1.9	0.164	1.7	0.91	979	15.5	986.9	11.8	1004.7	15.8	979	15.5	97.4
3250816-76	627	28435	0.8	21.3769	7.8	0.0783	12.4	0.0121	9.7	0.78	77.8	7.5	76.6	9.2	38	186.8	77.8	7.5	NA
3250816-78	605	1110646	2.7	10.7436	0.2	3.1629	1.8	0.2465	1.8	0.99	1420.2	23.4	1448.2	14.2	1489.5	3.6	1489.5	3.6	95.3
3250816-79	253	18206	1	20.1483	10.7	0.1052	10.9	0.0154	2.1	0.19	98.3	2	101.5	10.5	177.8	250.5	98.3	2	NA
3250816-80	941	250896	12.6	17.274	0.5	0.5479	2.3	0.0686	2.2	0.97	428	9.2	443.6	8.3	525.6	11.9	428	9.2	81.4
3250816-81	2385	30859	0.6	21.2251	3.1	0.031	8	0.0048	7.4	0.92	30.7	2.3	31	2.5	55	73.2	30.7	2.3	NA
3250816-82	206	114755	2.9	13.7786	1	1.4991	2.4	0.1498	2.2	0.91	899.9	18.8	930	14.9	1002.1	20.1	899.9	18.8	89.8

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 8)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
				206Pb*	±	207Pb*	±	206Pb*	±		206Pb*	±	207Pb*	±	206Pb*	±			
		204Pb		207Pb*	(%)	235U*	(%)	238U	(%)		238U*	(Ma)	235U	(Ma)	207Pb*	(Ma)			
3250816-83	438	35216	0.4	21.0428	4.9	0.1106	5.2	0.0169	1.7	0.33	107.9	1.8	106.5	5.2	75.5	115.8	107.9	1.8	NA
3250816-84	738	248968	3.2	19.5493	1.5	0.2414	4	0.0342	3.7	0.93	217	7.9	219.6	7.9	247.7	33.5	217	7.9	NA
3250816-85	90	5062	0.7	16.8523	8.9	0.5729	9.3	0.07	2.6	0.28	436.3	11.1	459.9	34.3	579.6	193.6	436.3	11.1	75.3
3250816-86	370	8919	1	21.7805	13.4	0.0401	13.8	0.0063	3.5	0.25	40.7	1.4	39.9	5.4	-7	324	40.7	1.4	NA
3250816-87	1241	23008	1.7	22.6303	5.3	0.0375	5.5	0.0062	1.2	0.22	39.6	0.5	37.4	2	-100.2	130.9	39.6	0.5	NA
3250816-88	313	16086	32	17.298	17.8	0.0174	58.8	0.0022	56	0.95	14.1	7.9	17.6	10.2	522.6	392.5	14.1	7.9	NA
3250816-89	86	69635	1.1	9.935	0.7	3.8649	2.2	0.2785	2.1	0.95	1583.8	29	1606.4	17.6	1636.2	12.9	1636.2	12.9	96.8
3250816-90	342	385858	1.1	12.6607	0.4	2.2102	3.3	0.2029	3.3	0.99	1191.1	35.7	1184.3	23.1	1171.8	7.9	1171.8	7.9	101.7
3250816-91	232	33127	0.5	21.4787	7.9	0.1109	8.2	0.0173	2.1	0.26	110.4	2.3	106.8	8.3	26.6	189.7	110.4	2.3	NA
3250816-92	488	36970	1	21.2993	3	0.0776	3.7	0.012	2.2	0.58	76.8	1.7	75.9	2.7	46.7	72.5	76.8	1.7	NA
3250816-94	382	3186	0.3	20.6808	33.5	0.0248	34.2	0.0037	6.6	0.19	24	1.6	24.9	8.4	116.6	811.2	24	1.6	NA
3250816-95	102	121298	1	10.2962	0.7	3.5785	3.3	0.2672	3.2	0.98	1526.7	43.2	1544.8	25.8	1569.6	13	1569.6	13	97.3
3250816-96	408	14767	1.5	20.7588	7.6	0.0801	8.2	0.0121	2.9	0.36	77.3	2.3	78.2	6.1	107.8	179.8	77.3	2.3	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 8)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma) 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
3250816-97	79	2968	1	15.2288	27	0.078	27.5	0.0086	5.1	0.18	55.3	2.8	76.3	20.2	795.7	576.6	55.3	2.8	NA
3250816-98	47	29969	0.9	12.587	2.6	2.118	3	0.1934	1.5	0.5	1139.5	15.7	1154.7	20.7	1183.3	51.2	1183.3	51.2	96.3
3250816-99	583	826014	1.3	9.9156	0.1	3.9896	1.9	0.2869	1.9	1	1626.1	27.3	1632.1	15.5	1639.8	1.3	1639.8	1.3	99.2
3250816-100	129	360258	1.4	10.1249	0.7	3.7492	1.1	0.2753	0.8	0.76	1567.7	11.1	1581.9	8.4	1600.9	12.8	1600.9	12.8	97.9

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Yigong river @ 3)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
NB0404-1	821	172023	0.7	20.6603	5.4	0.1112	5.8	0.0167	2.1	0.37	106.5	2.3	107	5.9	118.9	127.1	106.5	2.3	NA
NB0404-2	532	5168	0.6	21.5401	15.1	0.072	17	0.0112	7.9	0.47	72.1	5.7	70.6	11.6	19.8	364	72.1	5.7	NA
NB0404-3	944	59695	1.5	20.2216	3	0.1196	3.3	0.0175	1.5	0.45	112.1	1.7	114.7	3.6	169.3	69.8	112.1	1.7	NA
NB0404-4	902	19258	3.9	20.0582	6.3	0.0552	7.2	0.008	3.6	0.5	51.5	1.8	54.5	3.8	188.2	146	51.5	1.8	NA
NB0404-5	72	144662	2	9.5334	1.2	4.2528	3.9	0.2941	3.7	0.95	1661.7	54	1684.3	32	1712.4	22.8	1712.4	22.8	97
NB0404-6	363	174021	3.4	13.9639	1.2	1.5381	5.7	0.1558	5.6	0.98	933.2	48.7	945.7	35.3	975	24	933.2	48.7	95.7
NB0404-7	2011	22310	2.6	20.3278	2.4	0.1265	5.5	0.0186	5	0.9	119.1	5.8	120.9	6.3	157.1	55.2	119.1	5.8	NA
NB0404-8	175	14541	1.6	24.7945	36.6	0.0615	37.1	0.0111	6	0.16	70.9	4.2	60.6	21.9	-329.7	969.4	70.9	4.2	NA
NB0404-9	501	23561	1.4	22.5711	14.6	0.0692	15.1	0.0113	3.5	0.23	72.6	2.6	68	9.9	-93.7	361.1	72.6	2.6	NA
NB0404-10	893	1297	0.8	19.9899	13.8	0.0476	14.9	0.0069	5.5	0.37	44.3	2.4	47.2	6.8	196.2	321.8	44.3	2.4	NA
NB0404-12	1870	40433	1.4	20.3612	2.7	0.1182	2.9	0.0175	1.1	0.36	111.5	1.2	113.4	3.2	153.2	64.3	111.5	1.2	NA
NB0404-13	736	20549	2.2	21.4342	14.7	0.0537	14.9	0.0083	2.2	0.15	53.5	1.2	53.1	7.7	31.6	354.7	53.5	1.2	NA
NB0404-14	317	4915	0.7	26.4101	19.6	0.0608	20.1	0.0116	4.6	0.23	74.6	3.4	59.9	11.7	-494.7	524.2	74.6	3.4	NA
NB0404-15	1411	148567	1.5	21.0292	2.5	0.1073	3.5	0.0164	2.3	0.68	104.7	2.4	103.5	3.4	77.1	60.4	104.7	2.4	NA
NB0404-16	333	7820	0.6	18.6174	16.2	0.0794	16.7	0.0107	4.1	0.25	68.8	2.8	77.6	12.5	359	367.9	68.8	2.8	NA
NB0404-17	893	21835	2.1	20.3033	9.1	0.0743	9.4	0.0109	2.6	0.28	70.1	1.8	72.7	6.6	159.9	212.4	70.1	1.8	NA
NB0404-18	361	14518	1.8	19.5019	11.4	0.12	12	0.017	3.8	0.31	108.5	4.1	115.1	13.1	253.3	263.1	108.5	4.1	NA
NB0404-19	469	19034	1.3	19.6583	8.3	0.1265	9	0.018	3.4	0.38	115.2	3.9	121	10.3	234.9	192.7	115.2	3.9	NA
NB0404-20	774	23367	1.6	20.7441	6.3	0.1182	6.9	0.0178	2.9	0.43	113.7	3.3	113.5	7.4	109.4	147.7	113.7	3.3	NA
NB0404-21	417	12481	2.1	23.0164	14.7	0.101	15	0.0169	3	0.2	107.8	3.2	97.7	14	-141.9	365.1	107.8	3.2	NA
NB0404-22	313	11748	2.3	21.3347	11.9	0.1194	12.1	0.0185	2.2	0.19	118	2.6	114.5	13.1	42.7	284.7	118	2.6	NA
NB0404-23	367	15529	0.7	21.6495	15.8	0.1053	16	0.0165	2.6	0.16	105.7	2.7	101.6	15.4	7.6	381.3	105.7	2.7	NA
NB0404-24	578	31277	1	21.1312	5.3	0.1162	5.6	0.0178	1.8	0.33	113.8	2.1	111.6	5.9	65.6	125.3	113.8	2.1	NA
NB0404-25	1345	79306	2.6	20.5721	2.6	0.1118	4.7	0.0167	4	0.84	106.6	4.2	107.6	4.8	129.1	60.7	106.6	4.2	NA
NB0404-26	644	98720	1.4	12.7888	2.8	0.6505	15	0.0603	14.8	0.98	377.7	54.2	508.8	60.2	1151.8	56.2	377.7	54.2	NA
NB0404-28	427	12542	0.8	20.0711	7.2	0.1241	7.6	0.0181	2.4	0.32	115.4	2.8	118.8	8.5	186.7	167.9	115.4	2.8	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Yigong river @ 3)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
NB0404-29	110	2986	1	13.6413	25.1	0.1664	27.4	0.0165	10.8	0.4	105.3	11.3	156.3	39.6	1022.4	516.2	105.3	11.3	NA
NB0404-30	524	20979	1.2	21.074	4.5	0.1191	5.6	0.0182	3.3	0.6	116.3	3.8	114.2	6	72	106.8	116.3	3.8	NA
NB0404-31	613	20395	1.9	20.7236	3.5	0.1134	3.7	0.017	1	0.28	108.9	1.1	109	3.8	111.7	83.2	108.9	1.1	NA
NB0404-32	638	16887	1	20.3809	9.6	0.0785	10	0.0116	2.8	0.28	74.4	2.1	76.7	7.4	151	225.4	74.4	2.1	NA
NB0404-33	419	19686	2.3	20.2797	9.6	0.1322	10	0.0194	2.9	0.29	124.1	3.5	126.1	11.9	162.6	225.2	124.1	3.5	NA
NB0404-34	380	33864	1.9	17.2434	2	0.6468	4.9	0.0809	4.5	0.91	501.4	21.5	506.5	19.5	529.5	44.3	501.4	21.5	94.7
NB0404-35	818	110107	3.5	19.5855	3	0.2364	5.2	0.0336	4.2	0.82	213	8.9	215.5	10.1	243.5	69	213	8.9	NA
NB0404-36	432	108278	0.8	17.3834	0.6	0.6402	2.1	0.0807	2	0.95	500.4	9.6	502.4	8.3	511.8	14	500.4	9.6	97.8
NB0404-37	182	61239	2.1	13.9231	1.8	1.2735	5.9	0.1286	5.7	0.96	779.9	41.7	834	33.9	980.9	35.8	779.9	41.7	79.5
NB0404-38	514	3654	1.1	19.8693	9.2	0.122	9.6	0.0176	2.8	0.29	112.4	3.1	116.9	10.6	210.2	212.6	112.4	3.1	NA
NB0404-39	337	9605	1.1	20.2053	10.7	0.1184	11.3	0.0174	3.4	0.3	110.9	3.7	113.6	12.1	171.2	251.1	110.9	3.7	NA
NB0404-40	611	5454	0.9	20.3894	11.6	0.078	11.9	0.0115	2.9	0.24	73.9	2.1	76.3	8.8	150	271.5	73.9	2.1	NA
NB0404-41	89	191	3.7	15.2686	84.8	0.0857	85.8	0.0095	12.9	0.15	60.9	7.8	83.5	68.9	790.2	2349.1	60.9	7.8	NA
NB0404-42	315	195714	1.8	10.7153	2.5	2.7979	4.4	0.2174	3.6	0.82	1268.3	41.4	1355	32.9	1494.5	47.8	1494.5	47.8	84.9
NB0404-43	1207	20208	1	21.614	2.3	0.0758	4.7	0.0119	4.1	0.87	76.1	3.1	74.2	3.4	11.5	56.2	76.1	3.1	NA
NB0404-44	990	48813	1.8	20.9218	3.4	0.1186	5.2	0.018	3.9	0.76	114.9	4.5	113.8	5.6	89.3	80.4	114.9	4.5	NA
NB0404-45	779	269645	4.7	13.7766	2.1	0.8478	14.8	0.0847	14.7	0.99	524.2	73.8	623.4	69.1	1002.4	43.1	524.2	73.8	52.3
NB0404-46	1118	31541	1.1	20.0271	3.6	0.1134	4.4	0.0165	2.5	0.57	105.3	2.6	109.1	4.5	191.9	83.5	105.3	2.6	NA
NB0404-47	2022	101928	1.1	20.5698	4.3	0.0778	5.1	0.0116	2.7	0.53	74.3	2	76	3.7	129.3	100.7	74.3	2	NA
NB0404-48	735	12421	1.4	20.8027	7.7	0.1155	8.1	0.0174	2.7	0.33	111.3	3	111	8.5	102.8	181.5	111.3	3	NA
NB0404-49	790	21284	2.3	20.3993	5.5	0.0771	6.9	0.0114	4.2	0.6	73.1	3	75.4	5	148.9	130.1	73.1	3	NA
NB0404-50	422	14684	1.4	20.9375	14.4	0.119	14.8	0.0181	3.6	0.24	115.4	4.1	114.2	16	87.5	342.5	115.4	4.1	NA
NB0404-51	829	25162	0.8	20.8901	6.4	0.0778	7.6	0.0118	4.2	0.55	75.6	3.1	76.1	5.6	92.8	151.4	75.6	3.1	NA
NB0404-52	403	14702	0.6	21.8639	21.8	0.0719	21.9	0.0114	2.9	0.13	73.1	2.1	70.5	14.9	-16.2	531.3	73.1	2.1	NA
NB0404-53	477	5161	0.7	19.4261	20.3	0.0805	23.7	0.0113	12.3	0.52	72.7	8.9	78.6	18	262.2	470.1	72.7	8.9	NA
NB0404-54	713	26773	0.7	21.8584	6.6	0.1051	7	0.0167	2.4	0.35	106.5	2.6	101.5	6.8	-15.6	159	106.5	2.6	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Yigong river @ 3)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma) 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
NB0404-55	684	179444	2.1	11.3348	0.6	2.6172	5.6	0.2152	5.6	0.99	1256.2	63.6	1305.5	41.2	1387.3	11.2	1387.3	11.2	90.5
NB0404-56	805	31189	1.2	20.4833	4.3	0.1196	5.3	0.0178	3.1	0.59	113.5	3.5	114.7	5.7	139.2	100.6	113.5	3.5	NA
NB0404-57	98	5311	1.2	19.1254	34.7	0.1356	35.8	0.0188	8.8	0.25	120.1	10.5	129.1	43.4	297.9	814	120.1	10.5	NA
NB0404-58	81	103250	0.5	6.9537	0.7	7.9591	3.9	0.4014	3.9	0.99	2175.5	71.8	2226.4	35.6	2273.6	11.6	2273.6	11.6	95.7
NB0404-60	867	21646	1.2	22.2389	8.6	0.0712	8.9	0.0115	2	0.22	73.6	1.4	69.9	6	-57.5	210.7	73.6	1.4	NA
NB0404-61	189	6765	0.8	22.8847	16.7	0.1059	18.2	0.0176	7.2	0.4	112.3	8.1	102.2	17.7	-127.7	415.2	112.3	8.1	NA
NB0404-62	463	19737	1.4	20.7789	7.2	0.1259	8	0.019	3.7	0.46	121.2	4.4	120.4	9.1	105.4	169.2	121.2	4.4	NA
NB0404-63	125	64464	1.4	10.4664	1.3	3.1925	3	0.2423	2.7	0.91	1398.9	34.1	1455.3	23.1	1538.8	23.5	1538.8	23.5	90.9
NB0404-64	449	25711	2.4	20.9847	5.9	0.1514	12.3	0.023	10.7	0.88	146.8	15.6	143.1	16.4	82.1	140.6	146.8	15.6	NA
NB0404-65	764	20388	1.3	22.7473	10.7	0.0492	11.1	0.0081	3.1	0.28	52.1	1.6	48.7	5.3	-112.8	263.7	52.1	1.6	NA
NB0404-66	451	1934	0.8	17.7826	23.7	0.0881	24.2	0.0114	4.7	0.19	72.9	3.4	85.8	19.9	461.6	532.5	72.9	3.4	NA
NB0404-67	359	18676	1.6	20.8717	12.3	0.1147	12.6	0.0174	2.4	0.19	110.9	2.6	110.2	13.1	94.9	292.8	110.9	2.6	NA
NB0404-68	454	19386	1.2	20.7573	7.6	0.1124	8.1	0.0169	2.6	0.33	108.2	2.8	108.2	8.3	107.9	180.4	108.2	2.8	NA
NB0404-69	653	21194	2.5	20.8146	6.9	0.1123	7.9	0.017	3.9	0.49	108.4	4.2	108.1	8.1	101.4	163.2	108.4	4.2	NA
NB0404-70	471	14636	26.3	21.4792	19	0.0701	19.3	0.0109	3.1	0.16	70	2.1	68.8	12.8	26.5	460	70	2.1	NA
NB0404-71	276	5675	1.4	17.8182	18.7	0.0748	19	0.0097	3.7	0.19	62	2.3	73.2	13.5	457.2	417.8	62	2.3	NA
NB0404-72	546	32365	1.8	19.8197	4.8	0.1343	5.3	0.0193	2.1	0.39	123.2	2.5	127.9	6.3	216	112.2	123.2	2.5	NA
NB0404-73	1238	30957	5.8	20.7683	2.4	0.1195	3	0.018	1.8	0.62	115	2.1	114.6	3.2	106.7	55.6	115	2.1	NA
NB0404-74	80	20901	1.3	14.5873	4.6	1.2224	5.7	0.1293	3.5	0.6	784	25.5	810.9	32.1	885.3	94.9	784	25.5	88.6
NB0404-75	978	26261	0.8	21.1789	2.3	0.1204	3.1	0.0185	2.1	0.68	118.1	2.5	115.4	3.4	60.2	53.7	118.1	2.5	NA
NB0404-76	625	19937	1.1	20.2807	3.5	0.1215	4.5	0.0179	2.9	0.65	114.2	3.3	116.4	5	162.5	81.1	114.2	3.3	NA
NB0404-77	1039	33465	1.8	21.0481	4	0.1178	4.3	0.018	1.6	0.37	114.9	1.8	113.1	4.6	75	95.9	114.9	1.8	NA
NB0404-78	223	13648	1.6	19.204	16	0.1397	16.9	0.0195	5.2	0.31	124.3	6.5	132.8	21	288.6	368.8	124.3	6.5	NA
NB0404-79	2307	173825	2.8	19.7638	0.9	0.2274	2.5	0.0326	2.3	0.93	206.8	4.7	208.1	4.6	222.5	20.3	206.8	4.7	NA
NB0404-80	773	38739	1.2	21.1136	5.9	0.1125	6.3	0.0172	2.1	0.34	110.1	2.3	108.3	6.4	67.6	140.3	110.1	2.3	NA
NB0404-81	284	9100	2	22.7698	11.2	0.1174	12	0.0194	4.4	0.37	123.7	5.4	112.7	12.8	-115.3	277	123.7	5.4	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Yigong river @ 3)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
NB0404-82	85	59825	0.8	8.5706	1.1	5.4123	4.5	0.3364	4.4	0.97	1869.5	71.1	1886.8	38.7	1905.9	19.8	1905.9	19.8	98.1
NB0404-83	1403	1245421	1.9	5.1121	0.7	14.1799	3.1	0.5257	3	0.97	2723.5	66	2761.8	28.9	2789.9	11.2	2789.9	11.2	97.6
NB0404-84	611	9433	1.1	20.4173	13.2	0.0821	27.4	0.0122	24.1	0.88	77.9	18.6	80.1	21.1	146.8	310.8	77.9	18.6	NA
NB0404-85	321	7176	1.3	20.3823	10	0.1176	10.6	0.0174	3.6	0.34	111.1	3.9	112.9	11.3	150.8	234.3	111.1	3.9	NA
NB0404-86	451	5467	1.3	15.5549	21.3	0.1508	21.5	0.017	2.8	0.13	108.8	3	142.7	28.6	751.1	454.2	108.8	3	NA
NB0404-87	608	54721	8.4	19.0191	3.5	0.1376	19.5	0.019	19.2	0.98	121.2	23	130.9	24	310.7	79.6	121.2	23	NA
NB0404-88	238	254698	1.3	10.3807	0.9	3.293	4.2	0.2479	4.1	0.98	1427.8	52.9	1479.4	33	1554.3	17	1554.3	17	91.9
NB0404-89	2692	75493	4.7	20.4888	1.8	0.1131	5.1	0.0168	4.8	0.93	107.4	5.1	108.8	5.3	138.6	43.4	107.4	5.1	NA
NB0404-90	488	37859	1.5	19.1561	7.8	0.1275	8	0.0177	1.9	0.23	113.2	2.1	121.9	9.2	294.3	177.2	113.2	2.1	NA
NB0404-91	377	10041	1.1	23.2195	22.9	0.0702	23.4	0.0118	4.6	0.2	75.7	3.5	68.9	15.6	-163.7	576.9	75.7	3.5	NA
NB0404-92	534	7775	0.7	20.0874	14	0.0755	14.6	0.011	4.1	0.28	70.5	2.9	73.9	10.4	184.8	328.6	70.5	2.9	NA
NB0404-93	2001	51630	1.6	20.4872	2.7	0.0644	3.4	0.0096	2.1	0.61	61.4	1.3	63.4	2.1	138.7	62.4	61.4	1.3	NA
NB0404-94	840	1582	2	19.3736	11.4	0.1224	11.5	0.0172	1.8	0.16	109.9	2	117.2	12.7	268.4	261.3	109.9	2	NA
NB0404-95	432	8411	0.8	21.7217	14.9	0.0727	15.2	0.0114	3	0.2	73.4	2.2	71.2	10.4	-0.4	360.2	73.4	2.2	NA
NB0404-96	386	3590	0.7	18.2054	14.6	0.1251	16.4	0.0165	7.6	0.46	105.6	8	119.7	18.5	409.3	327	105.6	8	NA
NB0404-97	809	27357	1.8	20.2987	4.7	0.1181	5.3	0.0174	2.3	0.44	111.1	2.6	113.3	5.6	160.5	110.3	111.1	2.6	NA
NB0404-98	1543	968	1.3	19.5145	9.2	0.1133	10	0.016	4	0.4	102.6	4.1	109	10.4	251.8	211.5	102.6	4.1	NA
NB0404-99	327	46918	1.4	16.6586	1.5	0.7646	4	0.0924	3.7	0.93	569.6	20.3	576.7	17.6	604.6	31.4	569.6	20.3	94.2
NB0404-100	517	253086	0.7	14.7561	0.8	1.2704	1.9	0.136	1.7	0.91	821.8	13.4	832.6	10.8	861.5	16	821.8	13.4	95.4
NB0404-101	2725	76895	4.1	20.869	2.3	0.1153	3.4	0.0174	2.5	0.73	111.5	2.7	110.8	3.6	95.2	55.1	111.5	2.7	NA
NB0404-102	464	64455	2.2	17.3601	0.9	0.6476	4.2	0.0815	4.1	0.98	505.3	20.2	507	16.9	514.7	19.1	505.3	20.2	98.2
NB0404-103	626	30771	0.4	20.6164	9.1	0.0794	11.1	0.0119	6.4	0.57	76.1	4.8	77.6	8.3	123.9	213.5	76.1	4.8	NA
NB0404-104	890	82785	1.2	21.4705	4	0.1165	4.3	0.0181	1.6	0.37	115.9	1.8	111.9	4.6	27.5	95.8	115.9	1.8	NA
NB0404-105	1063	655477	36.3	9.9925	0.1	3.8602	1.8	0.2798	1.8	1	1590.1	24.9	1605.4	14.3	1625.5	2.7	1625.5	2.7	97.8
NB0404-106	133	83866	1.1	6.222	0.8	7.0533	5.4	0.3183	5.4	0.99	1781.4	83.3	2118.2	48.1	2463.2	13.1	2463.2	13.1	72.3

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Yigong river @ 3)

				Isotope ratios							Apparent ages (Ma)								
Grain	U (ppm)	206Pb/204Pb	U/Th	206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
NB0404-107	1795	129804	100	19.4414	0.7	0.2471	1.3	0.0348	1	0.81	220.8	2.2	224.2	2.5	260.5	17	220.8	2.2	NA
NB0404-108	178	123691	2.5	14.2738	1.4	1.507	3.3	0.156	2.9	0.91	934.6	25.6	933.2	19.9	930	28.4	934.6	25.6	100.5
NB0404-109	422	322497	2.6	14.007	0.8	1.4109	6.9	0.1433	6.9	0.99	863.5	55.8	893.5	41.3	968.7	15.8	863.5	55.8	89.1
NB0404-111	1104	116314	2.3	20.998	7.6	0.0763	8.5	0.0116	3.8	0.45	74.5	2.8	74.7	6.1	80.6	180.3	74.5	2.8	NA
NB0404-112	677	94071	8.1	20.1139	1.9	0.2294	2.8	0.0335	2.1	0.74	212.2	4.3	209.7	5.3	181.8	43.5	212.2	4.3	NA
NB0404-113	572	30893	1.3	20.114	6.4	0.1285	7.4	0.0187	3.7	0.5	119.8	4.4	122.8	8.6	181.7	149.5	119.8	4.4	NA
NB0404-114	504	24278	1.5	21.1069	7.1	0.1162	7.8	0.0178	3.3	0.43	113.7	3.7	111.6	8.2	68.3	168	113.7	3.7	NA
NB0404-115	1226	53594	10.9	20.8829	2.5	0.1099	3.4	0.0167	2.3	0.68	106.5	2.4	105.9	3.4	93.7	58.5	106.5	2.4	NA
NB0404-116	527	13159	1.2	20.4491	8.8	0.1316	9.3	0.0195	3.1	0.33	124.6	3.8	125.5	11	143.1	207.3	124.6	3.8	NA
NB0404-117	1148	4103	1.7	18.3508	13.7	0.1429	15.2	0.019	6.6	0.43	121.4	7.9	135.6	19.3	391.5	309	121.4	7.9	NA
NB0404-118	1790	138315	5.9	20.5988	1.7	0.115	2.5	0.0172	1.8	0.73	109.8	2	110.5	2.6	126	39.3	109.8	2	NA
NB0404-119	398	6096	1.6	19.0826	8.4	0.1314	9	0.0182	3.3	0.36	116.2	3.8	125.3	10.6	303.1	190.8	116.2	3.8	NA
NB0404-120	424	3640	2.3	21.2463	9.8	0.137	14.6	0.0211	10.8	0.74	134.7	14.4	130.4	17.9	52.6	235	134.7	14.4	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
03280836-1	373	267955	0.7	14.5867	0.8	1.3296	1.7	0.1407	1.6	0.89	848.4	12.4	858.7	10.1	885.4	16.3	848.4	12.4	95.8
03280836-2	432	12472	0.3	25.3453	18.6	0.0314	19.3	0.0058	5.2	0.27	37.1	1.9	31.4	6	-386.5	487.3	37.1	1.9	NA
03280836-4	956	29189	4.3	21.869	5.2	0.0673	6	0.0107	3	0.5	68.4	2	66.1	3.8	-16.7	125	68.4	2	NA
03280836-5	634	1639	0.7	20.4353	29.4	0.0516	29.9	0.0076	5.4	0.18	49.1	2.6	51	14.9	144.7	703.2	49.1	2.6	NA
03280836-6	4627	1687322	3.7	17.4088	0.1	0.6257	1.7	0.079	1.7	1	490.2	7.9	493.4	6.6	508.5	3	490.2	7.9	96.4
03280836-7	1256	131446	6.4	19.9765	0.9	0.2306	1.5	0.0334	1.2	0.79	211.8	2.5	210.7	2.9	197.7	21.6	211.8	2.5	NA
03280836-9	74	3484	1.7	12.5738	3.4	2.0392	4.8	0.186	3.3	0.7	1099.5	33.6	1128.7	32.5	1185.4	67.6	1185.4	67.6	92.8
03280836-10	77	3864	0.8	19.8794	18.3	0.1208	18.5	0.0174	3.3	0.18	111.3	3.6	115.8	20.3	209	426.3	111.3	3.6	NA
03280836-11	308	71974	2.1	12.8985	2	1.0263	5	0.096	4.5	0.91	591	25.6	717.1	25.6	1134.8	40.1	591	25.6	52.1
03280836-12	488	96254	2.9	15.0637	1.7	0.7109	7.3	0.0777	7.1	0.97	482.2	32.9	545.3	30.7	818.6	35.1	482.2	32.9	58.9
03280836-13	1692	281331	21.9	16.1216	0.5	0.854	2.8	0.0999	2.8	0.98	613.6	16.3	626.9	13.3	675.1	10.7	613.6	16.3	90.9
03280836-14	589	171982	11.2	13.5666	0.5	1.7384	2.3	0.171	2.2	0.97	1017.9	20.9	1022.9	14.7	1033.5	10.3	1033.5	10.3	98.5
03280836-15	319	156178	0.8	9.7358	0.3	3.855	2.4	0.2722	2.4	0.99	1552	32.6	1604.3	19.2	1673.7	5.4	1673.7	5.4	92.7
03280836-16	410	23883	23.1	17.5909	5.2	0.246	6.5	0.0314	4	0.61	199.2	7.8	223.3	13.1	485.6	114.3	199.2	7.8	NA
03280836-17	429	81102	0.9	21.3918	5.7	0.1269	7.1	0.0197	4.2	0.6	125.7	5.3	121.3	8.1	36.3	137	125.7	5.3	NA
03280836-18	232	61604	106	15.0375	0.7	1.2201	1.6	0.1331	1.4	0.89	805.3	10.8	809.8	8.9	822.2	15.2	805.3	10.8	98
03280836-19	936	20652	2.2	21.0842	7.2	0.0484	8.3	0.0074	4	0.49	47.6	1.9	48	3.9	70.9	172	47.6	1.9	NA
03280836-20	116	39336	1.8	17.656	5.1	0.6397	6.5	0.0819	4	0.61	507.5	19.3	502.1	25.7	477.4	113.8	507.5	19.3	106.3
03280836-21	332	24259	1.3	17.7077	8	0.1364	10.7	0.0175	7.1	0.66	111.9	7.8	129.8	13	471	177.2	111.9	7.8	NA
03280836-22	468	84522	2	15.7135	1	0.7445	3.4	0.0848	3.2	0.95	525	16.4	565	14.8	729.7	21.9	525	16.4	71.9
03280836-23	508	59979	1.9	20.166	5	0.1338	5.4	0.0196	2	0.37	124.9	2.5	127.5	6.4	175.7	116.2	124.9	2.5	NA
03280836-24	1134	9019	51.3	23.3223	15.5	0.0181	16.5	0.0031	5.6	0.34	19.7	1.1	18.3	3	-174.7	389.2	19.7	1.1	NA
03280836-25	2161	456660	6	17.5777	0.3	0.5901	2.2	0.0752	2.1	0.99	467.6	9.6	470.9	8.1	487.3	6.1	467.6	9.6	96

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 6)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma) 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
03280836-26	496	10001	1.1	13.2416	1.6	1.4678	9.7	0.141	9.5	0.99	850.1	76	917.2	58.5	1082.4	32.5	850.1	76	78.5
03280836-27	565	450006	1.6	11.808	0.4	2.4626	1	0.2109	0.9	0.92	1233.6	10.3	1261.1	7.2	1308.4	7.8	1308.4	7.8	94.3
03280836-28	72	15213	0.9	17.9629	6.5	0.5752	7.4	0.0749	3.6	0.49	465.9	16.4	461.4	27.6	439.2	144.3	465.9	16.4	106.1
03280836-29	285	11897	0.8	23.7403	15.6	0.0726	16.3	0.0125	4.9	0.3	80	3.9	71.1	11.2	-219.2	393.8	80	3.9	NA
03280836-30	886	965960	2	11.3806	2.6	2.4553	6.7	0.2027	6.2	0.92	1189.6	67.2	1259	48.4	1379.6	49.4	1379.6	49.4	86.2
03280836-32	186	63652	4.9	14.0352	1.5	1.3397	2.4	0.1364	1.9	0.77	824.1	14.3	863.1	14	964.6	31.1	824.1	14.3	85.4
03280836-33	391	113324	0.9	17.5052	1.4	0.5332	2.8	0.0677	2.4	0.86	422.3	9.8	433.9	9.8	496.4	30.6	422.3	9.8	85.1
03280836-34	1143	226013	1.5	17.5383	0.6	0.6383	1.5	0.0812	1.4	0.91	503.2	6.5	501.2	5.9	492.3	13.7	503.2	6.5	102.2
03280836-35	1147	58883	4.7	20.6707	2.8	0.1121	3.4	0.0168	1.8	0.55	107.4	1.9	107.9	3.4	117.8	66.2	107.4	1.9	NA
03280836-37	1510	231746	6.6	18.4604	2.6	0.2755	9.8	0.0369	9.5	0.96	233.5	21.8	247.1	21.6	378.1	58.2	233.5	21.8	NA
03280836-38	440	10696	1.2	22.4014	13.8	0.0424	14.1	0.0069	3.3	0.23	44.2	1.5	42.1	5.8	-75.2	337.7	44.2	1.5	NA
03280836-39	387	130718	3.1	13.5754	1.5	0.6069	6.5	0.0598	6.3	0.97	374.2	23.1	481.6	25	1032.2	31.3	374.2	23.1	NA
03280836-41	147	8749	1	19.3606	11.3	0.1355	17.1	0.019	12.8	0.75	121.5	15.5	129	20.7	270	259	121.5	15.5	NA
03280836-42	724	42070	1.5	20.43	3.9	0.1279	4.3	0.0189	2	0.46	121	2.4	122.2	5	145.3	90.7	121	2.4	NA
03280836-43	265	56290	0.7	19.8186	14.1	0.0807	14.5	0.0116	3.4	0.23	74.4	2.5	78.8	11	216.1	328.8	74.4	2.5	NA
03280836-44	217	185526	0.7	12.6605	0.8	2.0967	1.6	0.1925	1.3	0.85	1135	13.8	1147.7	10.8	1171.8	16.6	1171.8	16.6	96.9
03280836-45	403	9639	2.2	21.917	34.5	0.0454	35.2	0.0072	7.1	0.2	46.3	3.3	45	15.5	-22	856.2	46.3	3.3	NA
03280836-46	283	251638	1.2	7.3762	0.4	6.6159	5.3	0.3539	5.3	1	1953.3	89.2	2061.5	46.9	2171.4	6.5	2171.4	6.5	90
03280836-47	255	37044	1.1	17.8789	3	0.3948	6.2	0.0512	5.4	0.88	321.9	17.1	337.9	17.8	449.6	66.2	321.9	17.1	NA
03280836-48	166	6158	1.8	23.3614	37.4	0.0454	38.3	0.0077	8.1	0.21	49.4	4	45.1	16.9	-178.9	962.5	49.4	4	NA
03280836-49	1576	40022	2.7	21.7608	6.7	0.0375	7.7	0.0059	3.8	0.49	38	1.4	37.3	2.8	-4.8	162.1	38	1.4	NA
03280836-50	196	159236	1.8	13.1102	1.2	1.9431	2.6	0.1848	2.3	0.88	1092.9	22.7	1096.1	17.1	1102.4	24	1102.4	24	99.1

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 6)

Grain	U (ppm)	206Pb 204Pb	U/Th	Isotope ratios 206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
03280836-51	424	528	1.7	14.7482	37.5	0.0715	37.9	0.0076	5.6	0.15	49.1	2.7	70.1	25.7	862.6	806	49.1	2.7	NA
03280836-53	632	344572	2.8	11.2798	3	2.4534	11.1	0.2007	10.7	0.96	1179.1	115.8	1258.4	80.6	1396.7	57.1	1396.7	57.1	84.4
03280836-54	119	51037	1.6	10.2017	0.8	3.4716	2.3	0.2569	2.1	0.94	1473.8	28.3	1520.8	18	1586.8	14.4	1586.8	14.4	92.9
03280836-55	142	3125	1.5	11.361	297	0.0991	296.6	0.0082	9.7	0.03	52.4	5.1	95.9	278.2	1382.9	1100.8	52.4	5.1	NA
03280836-56	88	29771	1.2	16.197	4.2	0.6494	6.1	0.0763	4.4	0.73	473.9	20.3	508.1	24.3	665.1	89	473.9	20.3	71.3
03280836-57	206	6168	1	16.6679	32.2	0.0607	32.7	0.0073	5.5	0.17	47.1	2.6	59.8	19	603.4	713.7	47.1	2.6	NA
03280836-58	176	47235	3.6	12.8095	1.5	1.6761	1.9	0.1557	1.3	0.66	932.9	11.1	999.5	12.3	1148.6	29	1148.6	29	81.2
03280836-59	924	477353	9.6	12.6784	0.3	2.0036	2.1	0.1842	2.1	0.99	1090.1	20.6	1116.7	14.1	1169	5.1	1169	5.1	93.3
03280836-61	650	14273	1.5	20.7852	8.6	0.0579	9.5	0.0087	3.9	0.41	56	2.2	57.1	5.3	104.7	204.5	56	2.2	NA
03280836-63	1864	350707	16.6	13.3492	0.4	0.6932	4.7	0.0671	4.7	1	418.8	19.1	534.7	19.6	1066.1	7.2	418.8	19.1	39.3
03280836-64	323	5948	1.8	21.72	28.7	0.0566	29.3	0.0089	6	0.21	57.2	3.4	55.9	15.9	-0.2	703.3	57.2	3.4	NA
03280836-65	225	8932	3	24.4841	29.5	0.054	30.3	0.0096	6.7	0.22	61.6	4.1	53.4	15.7	-297.4	767.5	61.6	4.1	NA
03280836-66	465	21693	1.7	21.4653	4.6	0.1102	5.4	0.0171	2.8	0.52	109.6	3.1	106.1	5.5	28.1	111	109.6	3.1	NA
03280836-67	158	3308	0.7	14.9234	39	0.0918	39.7	0.0099	7.6	0.19	63.8	4.8	89.2	33.9	838	843.8	63.8	4.8	NA
03280836-69	239	108283	1.3	12.5643	0.7	2.1136	7.7	0.1926	7.7	1	1135.5	79.8	1153.3	53.1	1186.9	13.2	1186.9	13.2	95.7
03280836-70	326	11901	4.9	23.6721	39.8	0.0415	40.1	0.0071	4.8	0.12	45.7	2.2	41.3	16.2	-212	1035.6	45.7	2.2	NA
03280836-71	2109	29113	1.6	20.3113	2.8	0.0513	3.5	0.0076	2.1	0.59	48.6	1	50.8	1.7	159	66.4	48.6	1	NA
03280836-72	109	17723	1.1	17.4245	5.1	0.6481	5.5	0.0819	2.2	0.39	507.5	10.6	507.3	22.1	506.6	112.3	507.5	10.6	100.2
03280836-73	157	6654	0.5	25.8488	25.6	0.0991	26.3	0.0186	6.1	0.23	118.7	7.1	96	24.1	-437.9	681.1	118.7	7.1	NA
03280836-74	197	144926	1.8	9.3089	0.5	4.467	1.4	0.3016	1.3	0.94	1699.2	19.9	1724.9	11.8	1756.2	9.1	1756.2	9.1	96.8
03280836-75	70	81948	2.1	10.933	5.7	2.5386	8.7	0.2013	6.5	0.75	1182.3	70.7	1283.2	63.3	1456.3	108.6	1456.3	108.6	81.2
03280836-76	1575	5264	0.6	20.8176	5.7	0.0455	6.5	0.0069	3	0.47	44.2	1.3	45.2	2.9	101.1	135.8	44.2	1.3	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 6)

Grain	U (ppm)	206Pb / 204Pb	U/Th	Isotope ratios 206Pb* / 207Pb*	± (%)	207Pb* / 235U*	± (%)	206Pb* / 238U	± (%)	error corr.	Apparent ages (Ma) 206Pb* / 238U*	± (Ma)	207Pb* / 235U	± (Ma)	206Pb* / 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
03280836-77	3235	3367	13.8	15.8112	4.2	0.0892	5.1	0.0102	2.9	0.57	65.6	1.9	86.8	4.2	716.5	89	65.6	1.9	NA
03280836-78	267	183403	2.9	12.6533	0.8	2.1206	3.7	0.1946	3.6	0.98	1146.3	38.2	1155.5	25.8	1172.9	16.4	1172.9	16.4	97.7
03280836-79	931	34451	26.1	21.7668	3.1	0.0683	7.5	0.0108	6.9	0.91	69.1	4.7	67.1	4.9	-5.4	73.6	69.1	4.7	NA
03280836-80	963	407807	3.1	17.4401	0.9	0.6383	2.4	0.0807	2.2	0.92	500.6	10.4	501.3	9.3	504.6	20.8	500.6	10.4	99.2
03280836-81	64	179890	0.8	5.7223	3.3	10.5489	5	0.4378	3.7	0.75	2340.8	73.6	2484.2	46.3	2603.7	54.8	2603.7	54.8	89.9
03280836-82	938	9907	1.1	23.5088	17	0.0246	17.2	0.0042	2.5	0.15	26.9	0.7	24.6	4.2	-194.6	427.9	26.9	0.7	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 7)

				Isotope ratios							Apparent ages (Ma)								
Grain	U (ppm)	206Pb / 204Pb	U/Th	206Pb* / 207Pb*	± (%)	207Pb* / 235U*	± (%)	206Pb* / 238U	± (%)	error corr.	206Pb* / 238U*	± (Ma)	207Pb* / 235U	± (Ma)	206Pb* / 207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
TUTING-1	327	152891	0.8	12.6534	0.6	2.0081	1.2	0.1843	1	0.88	1090.4	10.3	1118.3	7.9	1172.9	11	1172.9	11	93
TUTING-2	138	62087	2	20.567	8.8	0.2211	9.1	0.033	2.4	0.26	209.2	4.8	202.8	16.7	129.6	206.4	209.2	4.8	NA
TUTING-3	611	1574	1.1	19.0965	14.3	0.0694	15.5	0.0096	6	0.39	61.6	3.7	68.1	10.2	301.4	327.1	61.6	3.7	NA
TUTING-5	40	15309	0.4	17.0738	6.2	0.6574	6.7	0.0814	2.5	0.37	504.5	12.2	513	27	551.1	135.6	504.5	12.2	91.5
TUTING-7	424	469421	1.2	14.9834	0.4	1.2055	1.6	0.131	1.5	0.96	793.6	11.3	803.1	8.8	829.7	9.3	793.6	11.3	95.6
TUTING-8	489	30797	1.7	20.8581	7.8	0.0622	9	0.0094	4.5	0.5	60.4	2.7	61.3	5.3	96.5	183.7	60.4	2.7	NA
TUTING-9	118	3195	1.2	20.6708	33.3	0.0558	33.8	0.0084	5.6	0.17	53.7	3	55.1	18.1	117.8	805.5	53.7	3	NA
TUTING-10	447	11009	1.3	25.4455	30.9	0.0237	31.1	0.0044	3.8	0.12	28.2	1.1	23.8	7.3	-396.8	821.3	28.2	1.1	NA
TUTING-11	84	43854	1.3	16.034	3.6	0.8668	3.9	0.1008	1.6	0.4	619.1	9.2	633.8	18.4	686.7	76.2	619.1	9.2	90.1
TUTING-13	561	61594	8.8	19.8449	3.2	0.2095	4.1	0.0302	2.5	0.61	191.5	4.7	193.1	7.2	213	74.7	191.5	4.7	NA
TUTING-14	16	8446	0.9	13.4667	6	1.8214	7.7	0.1779	4.8	0.63	1055.5	46.9	1053.2	50.3	1048.5	120.5	1048.5	120.5	100.7
TUTING-15	3073	16739	0.4	20.273	1.6	0.2243	13.6	0.033	13.5	0.99	209.2	27.8	205.5	25.3	163.4	37.8	209.2	27.8	NA
TUTING-16	407	220207	1.7	11.7275	0.9	2.6217	2.3	0.223	2.1	0.92	1297.6	24.8	1306.7	16.8	1321.7	17	1321.7	17	98.2
TUTING-17	1119	217364	0.9	17.3788	0.6	0.6092	1.2	0.0768	1.1	0.88	476.9	4.9	483	4.6	512.3	12.5	476.9	4.9	93.1
TUTING-18	154	6672	2.7	21.4007	25.9	0.0696	26.5	0.0108	5.8	0.22	69.3	4	68.3	17.5	35.3	628.6	69.3	4	NA
TUTING-19	166	102446	1.6	12.7881	0.7	1.9805	4.6	0.1837	4.6	0.99	1087.1	45.7	1108.9	31.1	1151.9	13	1151.9	13	94.4
TUTING-20	725	24428	0.8	20.8525	8.6	0.0483	8.9	0.0073	2.4	0.27	46.9	1.1	47.9	4.2	97.1	203.4	46.9	1.1	NA
TUTING-21	1498	73950	0.8	20.3768	2.7	0.1221	3	0.018	1.2	0.41	115.3	1.4	116.9	3.3	151.4	63.9	115.3	1.4	NA
TUTING-22	85	3766	0.6	4.1503	505	0.2059	505.5	0.0062	10.1	0.02	39.8	4	190.1	1326	3126.2	181.9	39.8	4	NA
TUTING-23	68	36988	1.1	14.3648	2.8	1.2543	5.1	0.1307	4.2	0.83	791.7	31.6	825.3	28.8	917	58.1	791.7	31.6	86.3
TUTING-24	2489	4123	2.6	20.544	4.7	0.0665	7.9	0.0099	6.4	0.81	63.6	4	65.4	5	132.3	109.4	63.6	4	NA
TUTING-26	187	83870	0.4	16.6078	1.2	0.7842	1.7	0.0945	1.2	0.69	581.9	6.6	587.9	7.7	611.2	27	581.9	6.6	95.2
TUTING-27	405	19471	2	22.3178	13.9	0.0431	14.3	0.007	3.6	0.25	44.9	1.6	42.9	6	-66.1	339.9	44.9	1.6	NA

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 7)

Grain	U (ppm)	206Pb	U/Th	Isotope ratios						error corr.	Apparent ages (Ma)						Best age (Ma)	± (Ma)	Conc (Ma)
		204Pb		206Pb* 207Pb*	± (%)	207Pb* 235U*	± (%)	206Pb* 238U	± (%)		206Pb* 238U*	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 207Pb*	± (Ma)			
TUTING-28	104	63899	1.1	9.9051	0.7	4.0652	2.9	0.292	2.9	0.97	1651.7	41.7	1647.4	23.9	1641.8	12.4	1641.8	12.4	100.6
TUTING-30	52	40759	0.6	12.6137	1.7	2.1867	2.4	0.2	1.7	0.7	1175.6	17.8	1176.8	16.4	1179.1	33.2	1179.1	33.2	99.7
TUTING-31	66	9271	0.8	21.2761	20.7	0.1182	21.3	0.0182	5	0.24	116.6	5.8	113.5	22.9	49.3	499.9	116.6	5.8	NA
TUTING-32	91	4313	1.9	23.5851	48.1	0.0599	48.6	0.0102	7	0.14	65.7	4.6	59.1	27.9	-202.7	1271.9	65.7	4.6	NA
TUTING-33	232	19809	1	20.5073	8.7	0.1228	8.8	0.0183	1.1	0.12	116.7	1.3	117.6	9.7	136.4	204.5	116.7	1.3	NA
TUTING-34	353	302933	5.1	14.0289	0.6	1.5858	1.5	0.1614	1.4	0.92	964.3	12.2	964.7	9.2	965.5	11.5	964.3	12.2	99.9
TUTING-36	276	79951	3.7	17.5492	1.7	0.5991	1.8	0.0762	0.6	0.34	473.7	2.8	476.6	6.8	490.8	36.8	473.7	2.8	96.5
TUTING-37	461	10713	8.4	18.8054	16.7	0.0252	28.2	0.0034	22.7	0.81	22.1	5	25.3	7	336.3	381.1	22.1	5	NA
TUTING-39	766	141871	72.5	16.8237	0.5	0.7147	1.3	0.0872	1.2	0.91	539	6.3	547.5	5.6	583.2	11.6	539	6.3	92.4
TUTING-40	194	20582	0.8	21.5905	7.5	0.1118	7.9	0.0175	2.3	0.3	111.9	2.6	107.6	8.1	14.1	181.1	111.9	2.6	NA
TUTING-40_2	145	192302	1.1	9.6721	0.3	4.2284	0.9	0.2966	0.9	0.96	1674.5	12.7	1679.5	7.4	1685.8	4.9	1685.8	4.9	99.3
TUTING-41	319	11937	6.8	20.8345	12.9	0.0401	13.3	0.0061	3.3	0.25	39	1.3	40	5.2	99.1	306.6	39	1.3	NA
TUTING-42	617	16053	1.1	10.3996	0.2	2.0891	3.3	0.1576	3.3	1	943.3	29	1145.2	22.7	1550.8	4.4	1550.8	4.4	60.8
TUTING-44	403	114147	10.8	15.0198	0.5	0.6372	8.6	0.0694	8.6	1	432.6	36.1	500.6	34.1	824.6	10.3	432.6	36.1	52.5
TUTING-47	816	184230	0.8	17.4633	0.4	0.6091	3.2	0.0771	3.2	0.99	479	14.8	483	12.5	501.7	9.2	479	14.8	95.5
TUTING-48	179	4445	1.9	23.2598	38.4	0.0361	39.2	0.0061	8	0.2	39.1	3.1	36	13.9	-168	986.9	39.1	3.1	NA
TUTING-49	378	450	0.7	15.0438	38.2	0.0301	45.7	0.0033	25.1	0.55	21.2	5.3	30.2	13.6	821.3	827	21.2	5.3	NA
TUTING-51	65	50142	1	9.7148	5	3.6992	20	0.2606	19.4	0.97	1493.1	258.6	1571.2	161.4	1677.7	92.5	1677.7	92.5	89
TUTING-53	474	2342	2.8	21.3673	22.4	0.0251	25.3	0.0039	11.7	0.46	25	2.9	25.1	6.3	39.1	542.8	25	2.9	NA
TUTING-54	378	103935	1.4	10.481	0.6	3.3623	4	0.2556	4	0.99	1467.2	52.5	1495.7	31.7	1536.2	12	1536.2	12	95.5
TUTING-55	430	67616	1.1	17.4873	1.9	0.3919	2.5	0.0497	1.6	0.65	312.7	4.8	335.8	7	498.6	41.3	312.7	4.8	NA
TUTING-56	226	57207	1	14.7568	1.3	1.1936	10.2	0.1277	10.1	0.99	775	73.9	797.6	56.5	861.4	27.5	775	73.9	90
TUTING-57	171	21596	1.4	13.3442	1.4	1.6526	2.8	0.1599	2.5	0.87	956.5	22	990.6	18	1066.9	28.1	1066.9	28.1	89.7
TUTING-58	336	28444	2.2	9.5889	0.3	3.6513	3.3	0.2539	3.3	1	1458.7	43.2	1560.8	26.5	1701.8	5.4	1701.8	5.4	85.7
TUTING-59	611	283733	1.9	19.3706	1.3	0.3104	4.2	0.0436	4	0.95	275.2	10.8	274.5	10.1	268.8	29.1	275.2	10.8	NA
TUTING-60	493	209688	8.6	13.9509	0.7	1.2121	4.4	0.1226	4.3	0.99	745.7	30.2	806.1	24.2	976.9	14.5	745.7	30.2	76.3

TABLE DR1. NEW U-PB CRYSTALLIZATION AGES (Downstream sample @ 7)

Grain	U (ppm)	206Pb/204Pb	U/Th	Isotope ratios 206Pb*/207Pb*	± (%)	207Pb*/235U*	± (%)	206Pb*/238U	± (%)	error corr.	Apparent ages (Ma) 206Pb*/238U*	± (Ma)	207Pb*/235U	± (Ma)	206Pb*/207Pb*	± (Ma)	Best age (Ma)	± (Ma)	Conc (Ma)
TUTING-61	54	15463	1.1	17.7668	5.6	0.6285	6.5	0.081	3.3	0.51	502	16.1	495.2	25.4	463.6	123.5	502	16.1	108.3
TUTING-62	1756	5631	3.2	20.4605	4.3	0.0621	4.8	0.0092	2	0.43	59.1	1.2	61.2	2.8	141.8	101.6	59.1	1.2	NA
TUTING-63	174.7	250019	1.165	10.3407	1.28	3.089	5.69	0.2317	5.6	0.97	1343.3	67.3	1430	43.7	1561.5	24.1	1561.5	24.1	86
TUTING-64	198	11117	1.6	22.6677	6.4	0.0671	6.9	0.011	2.5	0.37	70.8	1.8	66	4.4	-104.2	156.8	70.8	1.8	NA
TUTING-65	495	43221	1.4	20.6388	3.8	0.1203	4.1	0.018	1.4	0.34	115	1.6	115.3	4.5	121.4	90.6	115	1.6	NA
TUTING-66	422	12908	1.4	22.9548	10.2	0.0225	10.6	0.0037	2.9	0.27	24.1	0.7	22.6	2.4	-135.3	253.6	24.1	0.7	NA
TUTING-68	419	118383	1.1	17.4335	1.4	0.4831	7.6	0.0611	7.4	0.98	382.2	27.6	400.2	25.1	505.4	31.8	382.2	27.6	NA
TUTING-69	106	10241	0.6	17.7234	3.8	0.5755	4.1	0.074	1.6	0.38	460.1	7	461.6	15.4	469	85.1	460.1	7	98.1
TUTING-70	84	85787	1.7	15.0167	2.5	1.1203	3	0.122	1.7	0.55	742.2	11.6	763.1	16.1	825	52.3	742.2	11.6	90

New U-Pb age data for flood deposits at locations 6,7,9,10,11; and downstream samples from locations 3,5,6,7,8. Other U-Pb data used in modeling analysis are previously published by Amidon et al., 2005; Stewart et al., 2008; Zhang et al., 2012.

3.7.2 Sample locations and new petrographic data

Sample location data for all new samples (U-Pb and petrographic data) as well as new quartz, feldspar, lithics (QFL) petrographic data for flood deposits and select modern sediment samples. Other QFL data used in Figure 2 are from Garzanti et al., 2004; Zhang et al., 2012.

TABLE DR2. SAMPLE LOCATION AND NEW PETROGRAPHIC DATA

Downstream sample (# corresponds with Fig. 1B)	Latitude (N)	Longitude (E)	Elev. (m)	Quartz (%)	Feldspar (%)	Lithic (%)
Namche Barwa Cirque at #5	29.60642	94.93687	2884	64	29	7
Yigong river at #3	30.0967	95.0647	2154	39	35	26
Downstream sample at #6	29.04847	94.91079	449	66	22	12
Downstream sample at #7	28.99628	94.90344	425	-	-	-
Downstream sample at #8	28.57666	95.0702	264	66	15	19
2000 flood at #6	29.04868	94.9108	475	58	41	2
2000 flood at #7	28.96083	94.86507	466	56	38	6
2000 flood at #10	28.23504	94.99652	230	55	38	8
2000 flood at #11	28.17352	95.03054	199	61	35	4
Megaflood at #6	29.05137	94.90618	502	56	38	6
Megaflood at #7	28.96552	94.84708	553	55	41	5
Megaflood at #9	28.31759	94.95328	353	50	34	15
Megaflood at #10	28.23392	94.98344	270	56	35	9

3.8 Appendices

3.8.1 U-Pb analytical details

U-Pb age data was reduced using NUPMagecalc and ISOPLOT with the following standard age filters:

1. 10% error cutoff for $^{206}Pb/^{238}U$ and $^{206}Pb/^{207}Pb$ ratios (individually, higher $^{206}Pb/^{238}U$ error was allowed for extremely young ages)

2. 30% maximum discordance, 5% maximum reverse discordance

3. $^{206}Pb/^{238}Pb$ ages used under 1000 Ma, otherwise $^{206}Pb/^{207}Pb$ ages used

Ages were individually assessed for excess ^{204}Pb, with a typical cutoff of 500 cps.

3.8.2 Variables used in shear stress calculations

Discharge Q values:

Annual peak discharge = ~2 x 10^4 m^3/s (from Goswami, 1985)

2000 flood peak discharge = ~6.1 x 10^4 m^3/s (from Evans and Delaney, 2010)

Peak discharge from a megaflood emptying an 80 km^3 lake = ~1.0 x 10^6 m^3/s (from Montgomery et al., 2004)

Peak discharge from a megaflood emptying an 800 km^3 lake = ~5.0 x 10^6 m^3/s (from Montgomery et al., 2004)

Variables:

bed roughness length scale k_s = 0.1 to 1 m

hillslope angle ϕ = 37 to 39 degrees (modal values for outer and inner gorge, respectively, from Larsen and Montgomery, 2012) mean bed slope $S = 0.02$ (from Finnegan et al., 2008)

average rock density $\rho_s = 2700$ kg/m^3

water density $\rho = 1000$ kg/m^3

kinematic viscosity at 20 C $\nu = 1 \times 10^{-6}$ m^2/s

empirical constants for block shape and roughness $C_1 = 20$, $C_2 = 1.1$ (from Ferguson and Church, 2004)

CHAPTER 4: Rapid exhumation of the eastern Himalayan syntaxis since the Late Miocene

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4.0 Abstract

The peripheral Himalayan foreland basin preserves a rich archive of Himalayan landscape dynamics. In particular, analysis of sedimentary detritus provides a detailed record of landscape response to changes in tectonic and geomorphic conditions. Despite a wealth of bedrock analyses that demonstrate some of the most dynamic crustal processes on Earth, localized feedbacks between surface erosion and tectonic uplift within the Himalayan syntaxes obscure the distinction between an initial change in conditions and the subsequent landscape response. We refocus interpretation on the exhumation history on detrital analyses from Neogene sedimentary units proximal to the eastern syntaxis where active tectonic uplift and fluvial incision are inextricably linked. Combining magnetostratigraphy, detrital muscovite $^{40}Ar/^{39}Ar$ thermochronology, and coupled zircon U-Pb and fission track geo-thermochronology from a new 4.6 km section, we present a record of syntaxial exhumation since the Late Miocene. Our results indicate an increase in rock exhumation rates occurred within the eastern syntaxis between 5-7 Ma, and rapid exhumation rates (5-10 km/Ma) have been persistent since 5 Ma. We attribute this rate increase to enhanced erosion along an antecedent Yarlung-Siang-Brahmaputra River following tectonic uplift of Himalayan units. The persistence of rapid exhumation rates since 5 Ma may indicate the subsequent emergence of thermo-mechanical feedbacks between tectonic uplift and surface erosion at the intersection of the antecedent river and

the active structure. Comparison to similar work from across the Himalayan front further illustrates how the emergence of such localized thermo-mechanical feedbacks may be uniquely attributed to the particular geomorphic and tectonic conditions present in the Himalayan syntaxes, in particular the antecedent drainage or large rivers.

4.1 Introduction

The evolution of mountain landscapes reflects complex feedbacks between tectonic processes transferring mass within the Earth's interior and erosional processes redistributing mass at the Earth's surface (e.g., Davis et al., 1983; Beaumont et al., 1992; Avouac and Burov, 1996). Numerical (e.g., Willet, 1999; Beaumont et al., 2000), analog (e.g., Mugnier, et al., 1997; Marques et l., 2002; Hoth et al., 2006), and analytical (e.g., Whipple and Meade, 2004; Simpson, 2006) experiments document the dynamic influence of erosion and deposition on crustal deformation from local to orogenic scales. Erosion may influence crustal deformation patterns by reducing the influence of gravity (Simpson, 2004; 2006), focusing regional patterns of crustal strain by locally promoting crustal-scale folding (Burg and Podladchikov, 2000) and thrust faulting (Burg and Schmalholz, 2008). The resulting rock uplift steepens river channels (Whipple and Tucker, 1999), sustaining elevated erosion rates to rapidly exhume crustal material (Ring et al., 2001). The persistence of rapid rock exhumation will sufficiently increase the shallow geothermal gradient (Koons et al., 2002) to initiate a thermo-mechanical feedback sustaining steep topography on top of hot, actively deforming crust (Zeitler et al., 2001; Koons et al. 2013).

A concomitance of steep topography (Burbank, et al., 1996; Larsen and

Montgomery, 2012), steep geothermal gradients (Winslow et al., 1994; Craw et al., 2005) and active crustal-scale structures (Burg et al., 1998; Schneider et al., 1999) is observed at both ends of the Himalayan orogen. In these regions, margin-normal motion of the Indian-Eurasian plate collision transitions to strike-slip motion, warping Himalayan terrains southward into broad syntaxes (Wadia, 1931; Gansser, 1966; Treloar and Coward, 1991). Longitudinal rivers draining southern Tibet abruptly cross the Himalaya through the syntaxes, dramatically steepening (Finlayson et al., 2002) as they bisect rapidly exhumed metamorphic massifs (Zeitler et al., 1982; Burg et al., 1998). Bedrock thermochronology from both regions indicate rapid cooling of these massifs during the Late Pliocene and Pleistocene (e.g., Zeitler et al., 1993; Winslow et al., 1996; Burg et al., 1998; Malloy, 2004; Enkelmann et al., 2011) and geochronology further suggests that localized anatexis related to massif decompression has been ongoing since the Late Miocene (e.g., Schneider et al., 1999b; Booth et al., 2004). However, detailed exhumation histories of these regions are difficult to obtain from rapidly exhumed bedrock samples alone. Detrital cooling ages from foreland basin units proximal to the western syntaxis have proven useful for interpreting a Neogene record of rapid exhumation (e.g., Cerveny et al., 1988; also see Bernet and Garver, 2005; Ruiz and Seward, 2006), but similar constraints on the onset and duration of rapid exhumation are lacking for the eastern syntaxis.

Existing detrital cooling ages from the eastern Himalayan foreland basin units lack clear evidence for rapid exhumation rates prior to the Quaternary (Chirouze et al., 2013). Instead, detrital samples collected over 300 km downstream of the Brahmaputra confluence indicate constant exhumation rates between 1-2 km/Ma from 7 to 3 Ma.

However, young cooling ages indicating rapid syntaxial exhumation may have been rapidly diluted by older ages from local Himalayan sources (Zhang et al., 2012). For example, detrital zircons are rapidly diluted within the upper Brahmaputra River to less than 10% of detrital age populations (Cina et al., 2009), indicating that an early signal of rapid exhumation may have been unobserved in a ~50 grain zircon sample (Vermeesch, 2004).

We build on the early work of Chirouze et al. (2012, 2013) by sampling foreland basin units proximal to the eastern syntaxis. Specifically, we present new magnetostratigraphy, detrital zircon fission track and muscovite $^{40}Ar/^{39}Ar$ thermochronology from a stratigraphic section upstream of the transverse Subansiri and Kameng river drainages in Arunachal Pradesh, India. Coupling fission track and U-Pb analyses on detrital zircons permit source-specific analysis of low temperature mineral cooling, and complimentary muscovite analyses bolster out interpretation with independent data from a different target mineral. We use a one-dimensional thermal model to constrain the timing and magnitude of an exhumation rate increase within the eastern syntaxis, and interpret this increase as the potential consequence of regional river drainage reorganization, localized tectonic uplift or global climate change.

4.2 Background

4.2.1 Tectonic and geomorphic setting of the eastern Himalayan syntaxis

Following subduction of the Tethys ocean basin by the Early Eocene, collision between the Indian and Eurasian tectonic plates has deformed and uplifted the northern margin of the Indian plate to form the Himalayan orogen (e.g., Gansser, 1964; Searle et al., 1987). Portions of the subducted oceanic lithosphere demark the formal suture zone (called the Indus-Yarlung Suture Zone) between Transhimalayan intrusive units within Eurasian Plate terranes from orogenic units in the Himalaya. The Himalyan orogeny is defined along-strike by major thrust faults that subdivide a sequence of tectono-stratigraphic units. Primarily, the Main Central Thrust places deeply exhumed crystalline rocks of the Greater Himalaya above lower grade metamorphic rocks of the Lesser Himalaya, the Main Boundary Thrust places Lesser Himalayan rocks above sedimentary rocks of the Sub-Himalaya and where it is exposed, the Main Frontal Thrust places Sub-Himalayan rocks over modern foreland basin alluvium. The Greater Himalaya are separated from folded and faulted sedimentary rocks of the Tethyan margin by the South Tibetan Detachment fault (e.g., LeFort, 1975; Yin and Harrison, 2000).

At the eastern margin of the plate collision, transition from margin-normal convergence to dextral strike-slip movement warps the suture zone, Himalayan and Transhimalayan units southward to for the eastern Himalayan syntaxis (Figure 1A; e.g., Peltzer and Tapponnier, 1988; Holt, et al., 1991; Koons, 1995). Within the syntaxis, lithospheric strain is manifest in surface topography (Hallet and Molnar, 2001), exhibiting a clockwise motion that demonstrates transmission of strain from the crust to the upper mantle (Sol et al., 2007). The peculiar tectonic position of the syntaxis focuses deformation around the Indian plate indentor (Tapponier et al., 1990) such that relatively small stress changes produced locally may result in proportionately larger changes in lithospheric strain (Enlow and Koons, 1998) – essentially priming the region for the dynamic modification by surface processes (Simpson et al., 2006).

Within the eastern syntaxis, an active crustal-scale antiform (Burg et al., 1998) or pop-up structure (Ding et al., 2001) called the Namche Barwa metamorphic massif is deeply incised by a rapidly eroding reach of the Yarlung River. Along this reach, the Yarlung River abruptly drops over 2 km through a narrow bedrock gorge, often called the "Tsangpo Gorge," after flowing >1000 km along the Indus-Tsangpo Suture zone in southeastern Tibet (Montgomery, 2004). Within the gorge, erosion rates increase (Stewart et al., 2008; Enkelmann et al., 2011) along with proxies for fluvial incision (Finlayson et al., 2002; Finnegan et al., 2008) and local topographic relief (Larsen and Montgomery, 2012).

Extensive bedrock thermochronology documents rapid Plio-Quaternary cooling rates (5-10 km/Ma) focused around the Namche Barwa massif (Burg et al., 1998; Zeitler et al., 2001, Malloy, 2004; Enklemann et al., 2011; Zeitler et al., 2014). Zircon fission track data, which reflect cooling from shallow crustal temperatures of ~230° C (Brandon and Vance, 1992) during rock exhumation, are younger than 3.5 Ma within the massif, and locally younger than 1 Ma along the Tsangpo Gorge (Figure 1B; Burg, 1998; Seward and Burg, 2008; Enkleman et al., 2011; Zeitler et al., 2014). Biotite $^{40}Ar/^{39}Ar$ cooling ages, which are sensitive to higher temperatures of over 300° C (McDougall and Harrison, 1999) for such rapid cooling rates (e.g., Dodson, 1973), are also younger than 1 Ma in samples collected along the Tsangpo Gorge and rapidly increase in age with distance from the core of the massif (Figure 1B data from Ding et al., 2001; Malloy, 2004; Geng et al., 2006; Zeitler et al., 2014). Zircon U-Pb geochronology from bedrock samples within the gorge further indicates that local anatexis was associated with rapid rock exhumation in the Plio-Quaternary, and potentially even earlier in the Late Miocene (Ding et al., 2001; Booth et al., 2004; 2009). While modeling of bedrock data aid a reconstruction of exhumation history from spatial patterns of mineral cooling, a detailed exhumation history may be better preserved in the proximal sedimentary record.

Erosion of the massif enriches downstream river sediment in rapidly cooled minerals from Namche Barwa bedrock. Up to 45% of detrital mineral entering the Himalayan foreland basin have young cooling ages consistent with derivation from the Namche Barwa massif, adding a characteristic young cooling age component to the older detrital ages sourced upstream of the gorge (e.g., Pik et al., 2005; Stewart et al., 2008; Enklemann et al., 2011). Antecedent drainage through the syntaxis would have carried a similarly young age components to the foreland once rapid exhumation within the syntaxis had begun, so we predict that the presence of young cooling ages (relative to depositional age) in proximal foreland basin units should constrain the onset of rapid exhumation in the region. To reconstruct this exhumation history, we focus on detailed observations from a 4.6 km stratigraphic section along the Siji River near the village of Likabali in the easternmost portion of the Himalayan foreland basin (Figure 1B).

4.2.2 The easternmost Himalayan foreland basin

The Himalayan foreland basin is peripheral to the mountain front and nearly continuous along the Himalayan arc (Beaumont, 1981; Najman, 2006). At its eastern limit, the basin is less than 100 km wide, narrowly constrained between active thrust faults: the Main Frontal Thrust to the northwest, Mishmi Thrust to the northeast and Naga Thrust to the southeast. Estimates for the total thickness of Cenozoic sedimentary units within the basin range up to 7 km (Mathur and Evans, 1964; Karunakaran and Rangarao, 1976), thickening to the west with proximity to the Himalayan mountain front (Figure

1B; Verma and Mukhopadhyay, 1977). Neogene units are uplifted by the Tipi Thrust and Main Frontal Thrust to form steep foothills along the mountain front. These units are often offset by smaller cross-cutting faults (e.g., Agarwal, 1991; Yin et al., 2010; Burgess et al., 2013) but remain traceable along strike of the mountain front from the eastern syntaxis westward into Bhutan (Rangarao, 1983; Kumar, 1997).

Sedimentary rocks exposed in these foothills are traditionally divided into three lithologically distinct units (e.g., Karunakaran and Rangarao, 1976; Bhareli and Ratnam, 1978; Yin, 2006) and litho-correlated to the more extensively studied Siwalik Group in the central and western Himalaya (e.g., Kumar, 1997; Chirouze et al., 2012). Although these units are locally called the Kimin, Subansiri and Dafla formations (Kumar, 1997), we adopt the corresponding Upper, Middle and Lower Siwalik nomenclature for consistency with the well-established, broader Himalayan literature (e.g., Pilgrim, 1913).

Regionally, these Siwalik units comprise an upward coarsening clastic sedimentary sequence representing terrestrial deposition unconformable on Permian metasedimentary units of the Gondwana formation (Rangarao, 1983; Kumar, 1997). The Lower Siwalik is characterized by compact interbedded sandstone and shale, the Middle Siwalik is a softer and coarser micaceous, concretionary sandstone, and the Upper Siwalik is defined by interbedded conglomerate, sandstone and mudstone (e.g., Rangarao, 1983; Kumar, 1997; Chirouze et al., 2012). A gradational contact between the Upper and Middle Siwaliks is often preserved in Siwalik sections (e.g., Jain et al., 1974; Chirouze et al., 2012), whereas the Lower Siwalik is more commonly thrust over these units on the Tipi Thrust (e.g., Agarwal, 1991; Yin et al., 2010; Burgess et al., 2013).

4.2.2.1 Constraints on depositional age

Depositional ages of eastern Siwalik units are poorly constrained. Biostratigraphic constraints from mammalian fossils consists of only a single specimen (*Bos* sp.) from a conglomeratic bed of the Upper Siwalik (Singh, 1975; 1976). This solitary observation corroborates an informal description of a similar fossil by Maclaren (1904) observed north of the Subansiri River to loosely indicate a Pleistocene depositional age for the Upper Siwalik. Arenaceous foraminifera (specifically *Trocommina* sp.; Ranagrao, 1983), megafloral assemblages including *Zizyphus* sp. and *Sigigium* sp. (Singh and Prakash, 1980) and playnofossil suites (Dutta, 1980) observed in the Lower Siwalik suggest an Early or Middle Miocene depositional age for this unit (Singh and Tripathi, 1989; Singh, 1999).

The most robust depositional age constraints for these units come from a combination of detrital thermochronology and magnetostratigraphy (Chirouze et al., 2012; 2013). This work brackets the depositional ages for Upper and Middle Siwalik contact between 2 and 3 Ma and the Middle-Lower Siwalik contact between 11 and 13.5 Ma in a section along the Kameng River near Bhalukpong. The authors estimate the average sediment accumulation rate varies in this location between 420 and 440 m/Ma, higher than correlated sections from the central and western Himalaya (e.g., Johnson et al., 1985; Gautam and Fujiwara, 2000; Ojha et al., 2009).

4.2.2.2 Constraints on sedimentary provenance

Siwalik units are broadly interpreted across the Himalayan foreland to represent synorogenic deposition of Himalayan detritus eroded during periods of Late Cenozoic thrusting (e.g., Heim and Gansser, 1939; DeCelles et al., 1998; Najman, 2006). Paleocurrent indicators from easternmost exposures of Middle and Upper Siwaliks indicate that flow direction varied (Chirouze et al., 2013) but was dominantly to the south or southwest from a northern source region (e.g., Jain et al., 1974; Cina et al., 2009; Kesari, 2010; Chirouze et al., 2012) with no indication of flow reversal during deposition of the sequence.

Modal analyses are consistent with a northern source in both Himalayan and Tibetan terranes. Framework grains (e.g., Gogoi, 1989; Baruah, 2001) are characteristic of a recycled orogenic provenance, and heavy mineral suites indicate contributions from plutonic and metamorphic sources. Specifically, tourmaline, epidote, zircon, rutile and hornblende, garnet, staurolite, and kyanite metamorphic index minerals are found in all units, with andalusite and sillimanite appearing in the Upper Siwalik (Singh, 1976; Singh et al., 1982; Rangarao, 1983; Gogoi, 1989).

Detrital zircon U-Pb geochronology from five sections in eastern Siwalik units (Cina et al., 2009; Lang and Huntington, 2014) all indicate a mixed Tibetan and Himalayan provenance. Specifically, the presence of Gangdese-age zircons (Stewart et al., 2008; Cina et al., 2009; Zhang et al., 2012) in all Siwalik samples north of Bhalukpong (see Figure 1B) demonstrates a connection through the eastern syntaxis to source areas presently west of the Namche Barwa massif since at least the Middle or Early Miocene (Lang and Huntington, 2014). Moreover, bulk ε_{Nd} and ε_{Hf} isotopic analyses indicate that the absence of Gangdese-derived detritus in the Lower Siwalik near Bhalukpong may be explained by local deposition from a transverse Himalayan river like the Kameng River (Chirouze et al., 2013).

4.3 Methods

4.3.1 Mapping and stratigraphic surveying

To identify potential faulting and other complications for the interpretation of Siwalik stratigraphy, we conducted reconnaissance mapping of the Siji River area with a main focus on Upper and Middle Siwalik exposures. Accessibility in the area is severely restricted and exposure is limited to river channels at low-flow conditions, road cuts, and landslide scars. Because of inaccessibility, mapping and stratigraphic surveying focused on traverses along the Siji River and adjacent tributaries. Bedding measurements and unit contacts were plotted in the field on 1:12,000 satellite images and contacts away from the direct observations were extrapolated along strike of topographic dip-slopes measured in Google Earth.

Stratigraphic surveying of the Upper and Middle Siwaliks was completed using a 1.5 m Jacob's Staff and Abney level, progressing up-section along the Siji River from the mountain front near Likabali to the Tipi Thrust near Siji village. Surveying included regular observations of bed thickness, grain size and other characteristics, sedimentary structures, approximate mica and heavy mineral content, and clast lithology in channel lag deposits and conglomerate beds.

4.3.2 Magnetostratigraphy

We collected at least one oriented block sample for analysis of paleomagnetic polarity every 20 m in the lower 1.6 km of the Middle Siwalik. Every 100 m, we collected 3 to 6 samples for repeat analysis from single bedding horizons. Block samples were cored, cut into specimens and analyzed in the magnetic field free room at the Pacific Northwest Paleomagnetism Laboratory at Western Washington University. To determine paleomagnetic polarity, we measured the remanent magnetization of 126 specimens from 79 sites spanning the lower 1.6 km of the Middle Siwalik. Measurements were conducted on a 2-G Enterprises 755 superconducting rock magnetometer with 0.001 mA/m sensitivity. Thermal demagnetization in an ASC Model TD48 oven began with a subset of specimens with closely spaced steps to determine optimal temperature steps. This was followed for the rest of the specimens by demagnetization in seven 70° C to 100° C temperature steps from approximately 180° C to 580° C. Magnetic susceptibility was measured on a Bartington MS2 susceptometer after monitoring changes in magnetic mineralogy. Standard analytical methods were used to identify, quantify and analyse remanent magnetization components and interpret original polarity.

4.3.3 Detrital thermochronology

To interpret changes in source exhumation rates, we compared detrital mineral cooling ages from multiple stratigraphic horizons to additional samples from the modern Siang River and adjoining Himalayan tributaries. We collected five samples from the Upper and Middle Siwaliks in the Tipi Thrust footwall for zircon fission track and muscovite $^{40}Ar/^{39}Ar$ thermochronology. Modern fission track analyses have been previously published in the Siang River and adjoining Himalayan tributaries (Enkelmann et al. 2011), and we collected an additional six samples of modern sediment from the same locations for muscovite $^{40}Ar/^{39}Ar$ analyses. Combining multiple thermochronological datasets from the same stratigraphic horizons permits a more robust interpretation of exhumation rate changes that accounts for potential biases from mineral heterogeneity in the source region (e.g., Avdeev et al., 2012).

Sediment and sedimentary rock samples were manually disaggregated in a dilute (<3%) HCl solution and wet-sieved to isolate the 63 to 250 µm, 250 to 500 µm, and 500 to 1,000 µm grain size fractions. For both zircon and muscovite samples, we analyzed at least 50 grains per sample (and more when possible) to be at least 95% confident that our analyses did not miss an age component greater than 10% of the true age distribution (Vermeesch, 2004).

4.3.3.1 Muscovite $^{40}Ar/^{39}Ar$

Optically pure muscovite grains were randomly hand selected from the 500 to 1,000 µm grain size fraction (and also the 250 to 500 µm fraction for the Kapu sample to identify any potential size-age bias), cleaned in acetone, methanol and deionized water and packaged in aluminum foil packages for fast neutron irradiation. Irradiation was conducted in Cd-shielded packages for 0.5 and 6.1 hours in the 5C core and medium-flux positions at the McMaster University nuclear reactor in Hamilton, Ontario, Canada. Within the irradiation package, biotite age standard HD-B1 (24.18 Ma, Schwarz and Trieloff, 2007) were used to monitor the neutron flux gradient and Kalsilite and CaF_2 salts were used to determine interfering nuclear production ratios.

Single grain, total fusion $^{40}Ar/^{39}Ar$ analyses were conducted at the Arizona State University Noble Gas Geochronology and Geochemistry laboratory on a high sensitivity Nu Instruments Noblesse multi collector mass spectrometer with Nier-type source and zoom optics, coupled to a 60W IPG Photonics 970 nm diode laser with Photon Machine optics linked to a Newport controller. Age standard and unknown single grain samples were at 120° C in an ultra-high vacuum chamber for one day, then turbo pumped for one day to remove adsorbed atmospheric argon from the samples and chamber walls.

Total grain fusion was accomplished by firing the laser at 15 W for 2 minutes with a 0.6 mm beam diameter; the beam was moved to completely fuse each grain. Gases released by laser heating were cleaned in SAES NP10 getter pumps at 400° C and room temperature to remove active gases. Ar isotopes were measured on one Faraday detector fitted with a 10^{11} Ohm resistor and one ETP ion counting multiplier detector calibrated with air pipette shots. Automation of the analytical system was controlled by the Mass Spec software program (see Data Repository for blank and correction values).

Age calculations were performed from isotopic ratios using the *Isoplot* software plug-in following the decay constant, branching ratio and atmospheric Ar ratios from Steiger and Jäger (1977). Isotopic ratios, J values and calculated cooling ages for all analyses are reported with two sigma errors in the Data Repository, however only single grain analyses with at least 80% radiogenic ^{40}Ar were used in cooling age interpretations.

4.3.3.2 Zircon fission-track

Fission-track analyses were performed at Apatite to Zircon, Inc. using the laser ablation, inductively coupled plasma mass spectrometry (LA-ICP-MS) methods of Donelick et al. (2005) and Chew and Donelick (2012). Zircons were separated from the 63 to 250 μm grain size fraction with standard magnetic and density separation techniques. A random subsample of grains from each sample were mounted in Teflon, polished to expose internal grain surfaces and imaged with cathodoluminesence and highresolution electron backscattering prior to U-Pb analyses - see Lang and Huntington (2014) for details of U-Pb analyses and data reduction.

Fission-track analyses were subsequently performed on the same zircon grains. Grain mounts were etched in a NaOH-KOH eutectic melt at ~230° C for 24 to 72 hours and fission tracks were counted from within each ~30 μm diameter ablation pit at 1562.5x dry magnification in unpolarized, transmitted and reflected light on a Nikon Optiphot 2 microscope. The LA-ICP-MS approach uses a modified zeta calibration (Hurford and Green, 1983; Hasabe et al., 2003) where zeta calibration standards from Fish Canyon Tuff were updated during each LA-ICP-MS session and smoothed using a load-specific running-median. U, Th and Sm abundances were determined by LA-ICP-MS using an Agilent 7700x quadrupole mass spectrometer coupled to a Resolnetics RESOlution M-50 193 nm excimer laser.

4.4 Results

4.4.1 Stratigraphy of the Siji River region

We focused stratigraphic surveying and sampling across the gradational Upper and Middle Siwalik contact exposed in the footwall of the Tipi Thrust. Exposures of the Lower Siwalik were faulted out of stratigraphic section and internally deformed (Jain et al., 1974; Agarwal, 1991) restricting the interpretability of stratigraphic position without extensive additional magnetostratigraphy, which was impractical due to the severe inaccessibility of the unit. In contrast, the gradational Upper and Middle Siwalik contact is complete and well exposed in Siji River exposures. This contact marks a distinct, previously dated lithological boundary that aid correlation of our observations to other

Siwalik sections. This contact is gradational where coarse sandstones of the Middle Siwalik are interbedded with siltstone and conglomerate beds of the Upper Siwalik, so we defined the bottom of the Upper Siwalik where the frequency of siltstone beds first increases (Figure 3).

4.4.1.1 Middle Siwalik

The Middle Siwalik is at least 3.1 km thick in the Siji River region. Exposures support relatively high topography with steep slopes that commonly follow bedding planes. This unit is defined by thin to very thick beds of monotonous sandstone that coarsen upward from fine to very coarse sands with interbedded gravel and cobble conglomerate. The lower 1.7 km of the unit are distinguished by the reduced and eventual absence of quartzite, metamorphic and volcanic clasts in channel deposits as well as a reduction in grain size, bed thickness and mica concentration. This lower portion of the unit contains thin to thick beds of very fine to medium sandstone with rare beds of matrix-supported conglomerate. Sandstone beds exhibit parallel and cross stratification at centimeter to meter scales, including climbing ripples, planar bedding and trough cross bedding. Beds often exhibit truncated fining upward sequences. Sand grains are angular to subangular and range from poorly to well sorted. At the lowest horizons, interbedded matrix-supported conglomerate contain angular to subangular clasts of hard red or grey siltstone, mudstone and coal. Decimeter to meter scale round and tabular concretions are concentrated along bedding planes and surround coal fragments. Detrital coal fragments are ubiquitous and whole logs and stumps are observed throughout this portion of the unit.

The upper 1.4 km of the unit are distinguished by very thickly bedded coarse to very coarse sandstone, less common matrix and clast supported conglomerate and rare siltstone and mudstone beds. Sandstones coarsen upward from coarse to very coarse grained in the uppermost 500 m of the unit. Sandstones are generally massive or exhibit faint cross bedding at meter scales or larger; some contain pebble-gravel channel deposits. Grains are angular to subangular and poorly to moderately sorted. Sandstones are micaceous, with large micas observed in very coarse horizons. Channel deposits first appear as discontinuous stringers but progressively thicken up section into thick lenticular beds of matrix and clast supported conglomerate. These deposits contain variously colored quartzite, vein quartz, metamorphic and volcanic rock fragments similar to those observed in the Upper Siwalik. This part of the Middle Siwalik also contains centimeter to meter scale round and tabular concretions, commonly distributed along bedding planes. Coal logs, stumps and large coal fragments are observed throughout this portion of the section, as well as thick beds of laminated grey siltstone. Green-brown claystone are observed, but rarely.

4.4.1.2 Upper Siwalik

The Upper Siwalik is at least 1.5 km thick in the Siji River region. Relative to the Middle and Lower Siwaliks, the unit is recessive and forms subdued topography. The angular route of the Siji River apparently results from exploitation of easily erodible silt beds in the lower portion of the unit before the river crossed the Middle Siwalik to enter the Brahmapura braid plain. The lower 900 m of the Upper Siwalik are characterized by discontinuous sequences of thickly to very thickly interbedded conglomerate, sandstone and siltstone. Gravel-cobble conglomerate is clast supported and typically massive or crudely cross bedded. Conglomerate clasts are moderately sorted, subangular to subrounded and contain similar lithologies as observed in channel deposits of the Middle Siwalik. Specifically, clasts include volcanic breccia, amygdular and vesicular basalt, orthogneiss and schist, quartzite in a variety of colors, vein quartz, siltstone and detrital coal. Siltstone clasts are commonly angular and appear to be scoured from silt beds within the unit, whereas the remaining clasts are remarkably similar to Lesser Himalayan units exposed in the Siang valley. In particular the observed volcanic rocks is particularly diagnostic of the Abor Volcanics only exposed along the Siang River (Figure 1B; Jain and Thakur, 1978; Ali et al., 2012). Sandstones are medium to very coarse grained and exhibit decimeter to meter scale cross bedding, parallel bedding or may be massive. Siltstone and very fine sandstone beds may exhibit parallel lamination, cross lamination, and occasional post-depositional dewatering and soft sediment deformation structures (e.g., dish structures, convolute lamination). Both sandstone and siltstone beds are micaceous, commonly containing large mica grains. Large stumps and logs are occasionally observed in this portion of the unit.

In the upper 600 m of the unit the frequency of conglomerate beds increases as medium and coarse sandstone and siltstone beds are reduced to discontinuous lenses within conglomerate beds. In this portion of the section clast-supported conglomerates are notably more oxidized, and loosely consolidated. Clasts are moderately to well sorted, subangular to subrounded, and subtly coarsen upward from cobble to boulder sizes. Beds are typically massive, but may be crudely cross bedded. Clasts are also crudely imbricated, exhibiting a dominantly south-southeastern flow direction (similar to observations of Jain et al., 1974) or showing no preferential flow direction. Clasts are dominated by variously colored quartzite (red, green, white, grey) with some basalt, gneissic metamorphic rock fragments, dolomite and rare coal fragments. We note that the dip of the uppermost conglomerate beds decreases with proximity to the Tipi Thrust, indicating that these strata may have been deposited during tilting of underlying units (i.e., growth strata). Growth strata have also been observed in the uppermost Upper Siwalik near Bhalukpong (Burgess et al., 2013).

4.4.1.3 Interpretation of depositional environment

Our observations are consistent with previous interpretations of primarily alluvial deposition for Upper and Middle Siwaliks in this region (e.g., Karunakaran and Rangarao, 1972; Rangrao, 1983; Kumar, 1997; Chirouze et al., 2012). Specifically, the abundance of large-scale characteristic fluvial bedforms in the Middle Siwalik indicates deposition by a large, braided sand-bed river (e.g., Bristow and Best, 1993; Miall, 1996). Overlapping channel deposits with truncated fining upward sequences indicate a vertically stacked fluvial architecture (e.g., Walker and Cant, 1984) characteristic of axial deposition in a narrowly constrained basin similar to the present Brahmaputra River valley.

Considering this interpretation of the depositional environment, the up-section increase in grain size and characteristic bedform scale within the Middle Siwalik may indicate increasing flow velocity (e.g., Middleton and Southard, 1978; van Rijn, 1984), flow depth (e.g., Yalin, 1972) and sediment discharge (e.g., Gilbert, 1914; Karim and Kennedy, 1990), rather than increasing input of coarse sediment from transverse

Himalayan rivers at the axial river margin. Unfortunately, truncation of existing bedforms in this portion of the section complicates a detailed interpretation of paleocurrent direction in the field. Future work complimenting provenance analyses with detailed paleocurrent analyses (e.g., using the anisotropy of magnetic susceptibility from paleomagnetic specimens) at a single bed-scale might better evaluate this interpretation.

We interpret the increased frequency in gravel-cobble conglomerate and siltstone beds across the Upper-Middle Siwalik contact to represent a new contribution from transverse Himalayan rivers. This interpretation is consistent with the bulk isotopic measurements of Chirouze et al. (2013) that indicate a local Himalayan provenance in the Upper Siwalik near Bhalukpong. Moreover, movement of the Tipi Thrust since approximately 1 Ma (Chirouze et al., 2013) may explain the decreasing dip of depositional surfaces in the uppermost portion of the Upper Siwalik as growth strata deposited concurrently with tilting of underlying units. Importantly, the presence of growth strata demonstrates that sedimentary recycling of lower stratigraphic levels may have acted as an additional source of detrital cooling ages in the upper DTC3 sample, but not samples from lower stratigraphic levels.

The appearance of gravel and cobble conglomerate in the Upper Siwalik has been previously explained as a consequence of erosional unroofing of the Himalaya during the onset of glaciation in the Plio-Quaternary (Burbank, 1992). Although the eastern Himalayan foreland is more narrowly constrained than the central and western regions, we consider that this hypothesis may be equally valid to explain the abrupt change in grain size between the Middle and Upper Siwaliks. Moreover, glaciation of the Himalaya may have changed the characteristic grain size distribution of eroded Himalayan detritus

(Goldthwait, 1971), supplying both more silt and gravel to the foreland. The thick siltstone and fine sandstone beds interbedded with conglomerate in the lower portion of the Upper Siwalik is curious in a proximal alluvial environment, and we speculate that these beds may represent deposition of fine sediment along the mountain front from episodic glacial outburst floods (e.g., Montgomery et al., 2004; Lang et al., 2013) that may have began around the approximate age of the Upper-Middle Siwalik contact. Many finer beds cap fining upward sequences that include characteristic dewatering structures indicative of rapid deposition of hyperconcentrated floodwaters (Benvenuti and Martini, 2002), and appear sedimentologically similar to recent flood deposits observed along the Siang Valley (Lang et al., 2013). Future analyses of these specific bed sequences may provide insight into the longevity, periodicity, and erosional impact of such rare, yet geomorphically significant events.

4.4.2 Structure of the Siji River section

Our map of the study area (Figure 2) identifies the locations of and relationships between Siwalik unit contacts. Near the northern margin of the study area the Main Boundary Thrust places Paleozoic units including the Permian Gondwana formation over the Lower Siwalik forming distinctive topographic lineaments. The Lower Siwalik is internally deformed, with at least one antithetic reverse fault observed in outcrops along the Likabali-Garu road. This internal deformation combined with poor exposure prohibits an accurate assessment of Lower Siwalik thickness, although it has been previously estimated to be approximately 2 km thick in this location (Jain et al., 1974). The Tipi Thrust places the Lower Siwalik over the Upper Siwalik. This relationship is directly observed in the Siji River near Siji village and may be traced in regional topography owing to the contrasting competence between the units. The Main Frontal Thrust places the Upper and Middle Siwaliks over Quaternary alluvium along the mountain front. This relationship is primarily inferred from the abrupt change in topographic relief, but bedding relationships vary along the Siji River near the town of Likabali where slivers of compact sandstone and mudstone are locally observed.

Several west-northwest to east-southeast striking faults locally displace the Upper-Middle Siwalik contact in a left lateral sense. These faults may also extend southeastward to to the trace of the Main Frontal Thrust at the mountain front. As has been previously suggested by Misra and Srivastava (2009), young fluvial terraces near Likabali may indicate recent activity along these faults. The northwestern tips of the faults disappear within the Upper Siwalik and do not obviously cut the Tipi Thrust and may be buried by growth strata in the uppermost portion of the unit (e.g., Burgess et al., 2013). In this case, offset on these west-northwest to east-southeast striking faults must predate the < 1 Ma growth strata, indicating that young terraces along the mountain front may instead owe their origin to a change in climatic conditions.

Left lateral displacement on these west-southwest to east-southeast striking faults may be consistent with reverse sense movement, however without more detailed observations it is difficult to quantify the total amount of slip. Regardless, the continuity of Siwalik units suggest that these structures should not dramatically complicate our stratigraphic interpretations. However, there is some potential for duplication of the upper Middle Siwalik where the west-northwest to east-southeast striking faults intersect the section between our highest block sample and the Upper-Middle Siwalik contact.

4.4.3 Magnetostratigrahy

Characteristic remanent magnetizations were difficult to resolve from demagnetization paths. As has been previously observed in the region (Chirouze et al., 2012), in most specimens natural remanent magnetization became highly unstable at high temperatures, primarily resulting from a change in magnetic mineralogy consistent with growth of magnetite. Growth of magnetite was documented by a marked increase in magnetic susceptibility around 250°C in more than a third of the specimens analyzed. Instrument noise is not a significant confounding factor as it was at least an order of magnitude less than specimens' magnetic moments prior to the the onset of erratic behavior. Only a few of the coarser grained specimens physically disintegrated before the onset of erratic behavior.

The inability to define characteristic magnetizations for most specimens invalidates use of declination and inclination, or the derivative virtual geomagnetic poles (VGPs) to define polarity zones. For most specimens, we were only able to fit lines to low and medium temperature parts of demagnetization paths, which generally did not trend toward the origin. Least squares free line fits to low and medium temperature measurements have a mean declination of 1.7° and inclination of 43.8° with a 3.3° 95% confidence interval. This direction is not statistically different from the present axial dipole field (0° declination and 43.6° inclination) which supports the interpretation that recent overprinting was removed. We therefore assume that demagnetization paths trend toward more stable original magnetizations and evaluated demagnetization paths on orthogonal and equal area plots.

We calculated the polarity tendency for each specimen from demagnetization paths. Polarity tendency is defined as the angle between a normal polarity reference direction (359.5° declination and 46.7° inclination) and directions from the lowest and highest temperature measurements used for the line fitting. A decrease in this angle indicates a tendency for demagnetization to resolve toward a normal direction, while an increase in this angle indicates a reverse direction. We estimated the precision of polarity tendency angles as the maximum angular deviation of a line fit (MAD, Krischvink, 1980) in place of circular standard deviation in the calculation of the 95% confidence interval based on the Fisher k statistic. Polarity tendency allowed us to qualitatively distinguish horizons of likely normal polarity from reversed polarity.

We graded the quality of data from each specimen and used only the first and second quality specimens in the interpretation of polarity zones. First quality data have distinct normal or reverse polarity tendency (i.e., demagnetization paths trend clearly toward normal or reverse reference directions, see examples in Figure 4B). Second quality data are more ambiguous, due to short or noisy demagnetization paths. Third quality data are most ambiguous and generally indicate that the higher stability component may be a post-tilting overprint (additional examples of characteristic samples are in the Data Repository).

4.4.3.1 New constraints on depositional age

Calculations of polarity tendency do not indicate any normal polarity intervals thicker than approximately 120 m preserved in the 1670 m sampled portion of the Middle Siwalik. At deposition rates consistent with the central and eastern Himalaya (Ojha et al., 2009; Chirouze et al., 2012) the long C5n.2n normal chron between 9.984 and 11.056 Ma (Gradstein et al., 2012) would be between approximately 370 m and 485 m thick, and he absence of this long interval suggests that this portion of the Middle Siwalik is less than ~10 Ma. In fact, the absence of long normal polarity intervals is remarkably similar to polarity measurements between the C2An.3n chron at 3.032 Ma and C4n.1n chron at 7.528 Ma (Gradstein et al., 2012) made by Chirouze et al. (2012) in the Tipi Thrust footwall near Bhalukpong (Figure 8). Chirouze et al. (2012) further observe similar trends in grain size and bed thickness at the same stratigraphic horizons. Based on these similarities, we tentatively suggest a similar correlation to the geomagnetic polarity timescale.

This correlation establishes a minimum accumulation rate of 371 m/Ma for this portion of the section, which is consistent with regional accumulation rates between 340 and 440 m/Ma (Ojha et al., 2009; Chirouze et al., 2012). With no evidence for duplication of this portion of the section, we estimate the depositional ages of sampled horizons by linear interpolation from the top and bottom of the section assuming accumulation rates up to 440 m/Ma. The depositional age for the single Upper Siwalik sample (DTC3) is better constrained by detrital thermochronology. Zircon fission track ages are not diagenetically reset in the eastern Himalayan foreland (Bernet et al., 2006; Chirouze et al., 2013) so the depositional age of this horizon must be younger than the 1.8 Ma youngest detrital age component. Moreover, apatite fission track analyses from the correlative horizon near Bhalukpong have been thermally reset after deposition (apatite records cooling below temperatures as low as 90° C; Reiners et al., 2005), providing a 0.6 Ma minimum depositional age constraint (Chirouze et al., 2013). Deposition of sample

DTC3 between 0.6 Ma and 1.8 Ma is internally consistent with the stratigraphic position of the sample above the 2-3 Ma Upper-Middle Siwalik contact (Chirouze et al., 2012) and near the appearance of growth strata potentially correlating to an approximate 1 Ma exhumation of the Tipi Thrust (Chirouze et al., 2013).

4.4.4 Detrital thermochronology

4.4.4.1 New $^{40}Ar/^{39}Ar$ analyses of river sediment

4.4.4.1.1 Samples from Himalayan tributaries

Muscovite $^{40}Ar/^{39}Ar$ analyses from three sampled Himalayan tributaries produce older cooling ages with narrow age ranges recording early exhumation of tectono-stratigraphhic units associated with the Himalayan orogeny (Figure 6). Specifically, the Yamne (sample Z) and Yang Sang rivers (sample Y) both drain ophiolitic assemblages along the Indus-Yarlung suture zone (Singh, 1993; Acharyya, 2007) and consequentially share a ~29 Ma component indicating Oligocene exhumation of this unit. The Yamne River also drains Transhimalayan intruive units (Misra, 2009) north of the suture zone, which may explain the additional, smaller component of older ages around 43 Ma. The Siyom River (sample X) has a ~16 Ma cooling age peak consistent with Early Miocene exhumation of the Greater Himalaya along the Main Central Thrust (e.g., Yin et al., 2010; Uddin et al., 2010; Mathew et al., 2013; Warren et al., 2014).

4.4.4.1.2 Samples from the Siang River

Muscovite $^{40}Ar/^{39}Ar$ analysis of river sediment collected from three different locations along the main channel of the Siang River (samples A, B, and C) consistently have a wider range of cooling ages than are observed in Himalayan tributaries. Cooling age distributions include older ages similar to those observed in Himalayan tributaries with additional younger ages clustering around ~9 Ma. Each sample also contains a minor component of extremely young ages (<5 Ma) with percentage radiogenic argon less than the 80% cut off. Gong et al. (2009) observed similarly low radiogenic argon analyses in river sediment immediately downstream of the Tsangpo Gorge, which may indicate the local influence of hydothermal fluid circulation (Zeitler et al. 2014). Low radiogenic argon percentage may alternatively result from alteration of mineral grains by weathering, complicating the interpretation of these very young grains as necessarily reflecting rapid mineral cooling.

Like previous observations of young zircon fission track cooling ages (Stewart et al., 2008; Enkelmann et al., 2011), young cooling ages in Siang River samples indicates a contribution from the Namche Barwa Massif. No alternative sources of similarly young cooling ages are observed within the immediate drainage area. Bedrock $^{40}Ar/^{39}Ar$ ages of biotite from the Namche Barwa massif range between ~5 and <1 Ma (Malloy, 2004; Zeitler et al. 2014), and considering that muscovite has a slightly higher closure temperature (McDougall and Harrsion, 1999) the same bedrock should produce slightly older muscovite cooling ages. Alternative sources of young muscovite in igneous bedrock surrounding the massif produces $^{40}Ar/^{39}Ar$ cooling ages older than 10 Ma (e.g., Maluski et al., 1982; Coulon et al., 1986; Copeland et al., 1987; Copeland and Harrison, 1990; Copeland et al., 1995; Harrison et al., 2000), potentially contributing to the older ages observed in Siang River samples but not also observed in Himalayan tributaries (e.g., ~23

Ma ages).

4.4.4.2 New analyses of Siwalik units

4.4.4.2.1 Coupled zircon fission track and U-Pb analyses

By coupling fission track analyses to U-Pb dated zircons, we can identify the provenance and cooling age of individual grains simultaneously. Detrital zircon U-Pb geochronology is a well-established provenance indicator in the eastern Himalaya (e.g., Stewart et al., 2008; Cina et al., 2009) as crystallization ages younger than 300 Ma are predominantly derived from Tibetan igneous units (Zhang et al., 2012; Lang and Huntington, 2014). Zircons from the Namche Barwa massif are typically older than 300 Ma, except for extremely young ages from anatectic units (Booth et al., 2004; Lang et al., 2013). To interpret exhumation of the massif specifically, we focus interpretation to fission track analyses of zircons with crystallization ages older than 300 Ma, still including zircons less than 30 Ma is the U/Th ratio indicates a metamorphic origin (U/Th >10, Hoskin and Schaltegger, 2003).

To interpret fission track data, we deconvolved cooling age populations into constituent age components, or "peaks" using the DensityPlotter application of Vermeesch (2012). Overlapping analytical error on single grain analyses reduces the interpretability of individual grain analyses, instead we focus interpretation on the minimum distinguishable age component. Results from analyses, including decomposed age components are presented in Figure 5 and detailed in the Data Repository.

The Upper Siwalik sample (DTC3) is dominated by young cooling ages with two discernable age components at 1.8 and 4.1 Ma. These young ages are reminiscent of young cooling ages previously observed in samples from the Siang River. This previously published work attributes two young cooling age components at 0.9 and 3.5 Ma observed in Siang River samples to recent exhumation of the massif and slightly older age components at ~7 and ~11 Ma to incipient exhumation in the Late Miocene (Stewart et al., 2008; Enklemann et al., 2011). Similarly, we attribute the young cooling ages to samples DTC3 to a Namche Barwa source.

Middle Siwalik samples have a wider spread of older ages with a youngest age component that decreases up section. The lowest sample is curiously dominated by Tibetan zircons, with Himalayan zircons only defining a singular component at 16.7 Ma. Above this, sample 25c, 50b and 75b are defined by three components, the youngest of which systematically decreases from 11.4 Ma to 6.0 Ma to 4.3 Ma in each sample, respectively. For all samples, fission track analyses of zircons with Tibetan igneous U-Pb ages produce relatively old age components around 12 Ma and 26 Ma. Based on analyses from Tibetan and Himalayan tributaries, Enklemann et al. (2011) attributed age components older than ~18 Ma to either Transhimalayan or Lesser Himalayan units, so we anticipate that the younger age components in these sections may also reflect early exhumation of the Namche Barwa massif.

4.4.4.2.2 Muscovite $^{40}Ar/^{39}Ar$ analyses

$^{40}Ar/^{39}Ar$ analyses produce a wide range of cooling ages in Siwalik samples (Figure 7). The high analytical precision of $^{40}Ar/^{39}Ar$ analyses permits interpretation of single grain ages rather than age components, particularly as irregular age spectra may reflect mineral heterogeneity in source region bedrock (e.g., Clift et al., 2004) in addition to source exhumation patterns. To avoid speculation on such complications, we focus interpretations to the presence of young $^{40}Ar/^{39}Ar$ cooling ages (as in provenance analyses; e.g., Lang and Huntington, 2014) in Siwailk samples.

Analysis of sample DTC3 primarily produce older cooling ages similar to analyses from Himalayan tributaries, but also produce a few younger (<5 Ma) ages originating from the Namche Barwa massif. The simplest interpretation for the predominance of Himalayan ages is the Upper Siwalik unit requires mixing of young, recently exhumed cooling ages from the massif with older ages from Himalayan tectono-stratigraphic units, potentially recycled from lower Siwalik levels. Uplift of Siwalik units is estimated to have begun by ~1 Ma (Chirouze et al., 2013) indicating that recycling of lower levels may have begun concurrent or prior to the deposition of this sample.

The youngest individual cooling ages in Middle Siwalik samples systematically decrease up section. The lowest sample, 5b, is dominated by older ages between 20 and 35 Ma. Such ages are very similar to observations from Himalayan tributaries draining the portions of the suture zone, and combined with the dearth of zircons with characteristic Himalayan ages these observations suggest that this lowest sample may record erosion of the suture zone prior to exhumation of the Namche Barwa massif. However, the presence of Himalayan zircons in samples above and below this sample (Lang and Huntington, 2014) alternatively suggest that this sample may instead represent an anomalous contribution from Tibetan units. The youngest individual ages from the remaining Middle Siwalik samples decrease up section from 12.9 Ma to 8.1 Ma to 6.9 Ma for samples 25c, 50b and 75b. The decrease in these young ages may represent increased exhumation in the Namche Barwa massif within the eastern syntaxial source region.

4.5 Discussion

4.5.1 Interpretation of thermochronologic lag time

Source region exhumation history may be interpreted from detrital thermochronology in foreland basin units by calculation of thermochronological lag time (Bernet and Garver, 2005). Thermochronological lag time is the difference between a minimum thermochronologic cooling age (or age component) and the depositional age of the sampled sedimentary unit (Garver and Brandon, 1994). When the duration of intermontane sediment storage is small relative to the timescale of mineral cooling (e.g., Garver et al., 1999; Bernet et al., 2004) and dynamic perturbations to the subsurface thermal field may be accounted for (usually with a thermal model, e.g., Braun et al., 2006) lag time is a useful proxy for exhumation rates in the source region. Moreover, systematic variations in lag time with depositional age may elucidate fundamental changes in the exhumation of source terranes. An upsection decrease in lag time (increase with depositional age) may indicate accelerating exhumation during tectonic uplift, or a constructive phase of orogenesis (Bernet and Garver, 2005). Constant lag time may further indicate attainment of a localized exhumational steady state (e.g., Willet and Brandon, 2002; Burbank, 2007).

For Siwalik samples, we calculated thermochronologic lag time for the youngest individual grain $^{40}Ar/^{39}Ar$ cooling ages and fission track age components (Figure 9). In both datasets, minimum lag times systematically decrease up-section reaching lag times similar to modern river sediment samples by approximately 5 Ma (at sample 50b), after which they remain consistently low. We interpret this pattern to indicate an increase in exhumation rates within the syntaxial source area in the Late Miocene and constant, rapid rates of rock exhumation since ~5 Ma. Because lag time decreases to within the range of modern bedrock cooling ages uniquely attributed to the Namche Barwa massif, and no alternative sources of similarly rapid exhumation are observed within the syntaxis, we specifically attribute this exhumation rate increase to unroofing of the massif. This attribution is consistent with independent modeling of massif exhumation constrained by a compilation of bedrock cooling ages (Zeitler et al., 2014), suggesting that our proximal sedimentary section preserves a detailed history of syntaxial exhumation.

4.5.1.1 Thermal modeling with PECUBE

To quantify the timing and magnitude of exhumation rate change, we use a simplified one-dimensional version of PECUBE, a finite element numerical code (Braun, 2003) often used for interpreting thermochronological data (Braun et al., 2013). We use the code to predict a time series of cooling ages resulting from a step change in Late Miocene exhumation rate (Figure 10A). PECUBE incorporates the influence of heat advection as well as heat diffusion and production to interpret cooling in the source region - an important influence on mineral cooling at such extreme rates of rock exhumation (Braun et al., 2006). A one-dimensional model neglects the potential effects of lateral heat transfer or changes in topographic relief. However, both the crustal-scale folding (Burg et al., 1998) and pop-up structures (Ding et al., 2001) proposed as exhumation mechanisms for the Namche Barwa massif predict dominantly vertical heat advection such that lateral thermal gradients may be neglected (e.g., Zeitler et al., 2014), and previous modeling of detrital cooling populations indicate that even large changes in topographic relief have only a secondary effect on the width of the detrital age distribution (Braun et al., 2006; Whipp et al., 2009) rather than the cooling age peaks (Ruhl and Hodges, 2005).

We predicted cooling ages from scenarios reflecting a 1-20 fold instantaneous change in exhumation rate occurring between 1-15 Ma. Over six sets of simulations, we varied the final exhumation rate between 5 km/Ma and 10 km/Ma, characteristic of Plio-Quaternary rates (Burg et al., 1998; Ding et al., 2001; Booth et al., 2009; Enklemann et al., 2011; Koons et al., 2013; Zeitler et al., 2014). We used a simple root-mean-squared misfit function to compare cooling age predictions with our observations. The composite misfit values from all sets of models are presented for both thermochronologic datasets in Figure 10B.

Thermal modeling consistently indicates that the upsection change in lag time is best explained by a ~5-10 fold increase in the exhumation rate between 5-7 Ma. Because our samples do not extend earlier into the Miocene, it if difficult to constrain the onset of this rate increase within the Late Miocene. Work by Zeitler et al. (2014) suggest that this onset is ~10 Ma, however we anticipate that further analyses of Siwalik units will constrain this time more precisely. Interestingly, thermal modeling suggests that exhumation rates may have been closer to 1-2 km/Ma in the eastern syntaxis, prior to the rate increase. Chirouze et al. (2013) propose that the eastern Himalayan front have been exhuming at a similar pace since 13 Ma. Considering this proposition, it may be that exhumation rates only increased in the syntaxis where an antecedent river system could maintain surface erosion rates commensurate with an increase in the rate of rock uplift.

4.5.2 A mechanism to initiate rapid exhumation

Integration of the Yarlung and Brahmaputra rivers by river capture has been proposed as a mechanism to initiate rapid exhumation of the Namche Barwa massif (Zeitler et al., 2001; Clark et al., 2004). However, provenance analyses from the same Siwalik units demonstrate that such an event must have occurred prior to deposition of the Lower Siwalik in the Middle or Early Miocene (Lang and Huntington, 2014). The lag of at least 6 Ma between these events strongly suggests that onset of rapid exhumation within the syntaxis was unrelated to integration of the rivers. Instead, erosion by an antecedent river may have amplified regional tectonic uplift of the eastern Himalaya, focusing strain to the syntaxis since the Late Miocene.

At a continental scale, focused crustal strain may be anticipated in a syntaxial setting where the 3D structure of a curved subduction boundary acts to stiffen the under ridding plate (Bendick and Ehlers, 2014). This effect may explain regional patterns of uplift within the eastern syntaxis, but not also deformation of Himalayan units on the under riding Indian Plate. Field observations, geochronology and thermochronology from the broader eastern Himalaya constrain two incidences of Late Miocene duplexing in the footwall of the Main Central Thrust (Yin et al. 2010). Out-of-sequence faulting above the northern duplex was ongoing by ~7 Ma (Adlakha et al., 2013; Warren et al., 2014), tectonically uplifting Greater Himalayan units. By either mechanism, tectonic uplift may have extended northeastward to concurrently initate uplift of the Namche Barwa antiform by ~7 Ma.

As the eastern Himalaya uplifted, transverse rivers responded by eroding headward whereas the antecedent drainage of the ancestral Yarlung-Siang-Brahmaputra River incised into the actively uplifting antiform (e.g., Friend et al., 1999). The correspondence of similarly rapid rates of surface erosion and rock uplift is a critical factor for the modification of tectonic uplift by surface processes (Simpson, 2006), and if focused erosion at the northeastern margin of this structure was commensurate with rates of rocks uplift we would predict the local development of a thermo-mechanical feedback (Koons et al., 2002; 2013). Feedback behavior may have developed between ~7-5 Ma and has since sustained rapid exhumation of the Namche Barwa massif while exhumation rates remained low across the broader eastern Himalaya.

4.5.3 Lag time across the Himalaya

Chirouze et al. (2013) interpret constant exhumation rates between 1-2 km/Ma sustained since 13 Ma in the broader eastern Himalaya. This constant, slower exhumation history may better reflect erosion by transverse rivers (e.g., the Kameng River) that have developed in response to, rather than despite orogenic uplift. In this case, we anticipate that evaluation of lag time from correlative foreland units across the Himalayan front should similarly record constant, slower rock exhumation and that an upsection decrease in lag time should only be observed proximal to antecedent river drainages.

Compilation of lag time studies from across the Himalaya (Figure 13) appears to validate this hypothesis. In addition to this study, an upsection decrease in lag time is only observed in Indus River deposits proximal to the western Himalayan syntaxis (Cerveny et al., 1988 also in Bernet and Garver, 2005; Ruiz and Seward, 2006; Rahl et al., 2007). In contrast, all other sections along the main Himalayan front record constant or slightly decelerating exhumation histories (e.g., Bernet et al., 2006; Jain et al., 2009;

Chirouze et al., 2012b; Chirouze et al., 2013). While this dataset remains sparse (and difficult to obtain), the collective dataset suggests that erosion by large, antecedent rivers has fundamentally altered the exhumation history of the Himalayan syntaxes.

4.6 Summary and conclusions

This study investigates the exhumation history of the eastern Himalayan syntaxis by interpreting the eroded detritus from the region. We focus specifically on a proximal sequence of foreland basin deposits in a 4.6 km thick section of Upper and Middle Siwaliks exposed along the Siji River. We combine detailed stratigraphic surveying, magnetostratigraphy and analyses of two different detrital thermochronmetric systems, muscovite $^{40}Ar/^{39}Ar$ thermochronology and coupled zircon fission track and U-Pb geo-thermochronology to measure thermochronologic lag time since the Late Miocene. Lag times from both thermochronologic systems decrease up section in the Middle Siwalik, consistent with a 5 to 10 fold increase in syntaxial exhumation rates prior to 5 Ma. Since 5 Ma rapid exhumation rates are similar to those presently observed from the Namche Barwa massif suggesting that steep topographic gradients and rapid surface erosion presently exhuming the massif may be a long lived feature of this landscape.

We conclude that the >6 Ma time lag between the integration of the Yarlung and Brahmaputra river systems and the onset of rapid exhumation indicates that integration of the river system was not a mechanism to initiate rapid exhumation of the Namche Barwa massif. Instead, we propose that antecedent drainage of the ancestral Yarlung-Siang-Brahmaputra River locally exhumed Himalayan units tectonically uplifted by Late Miocene structures extending into the eastern Himalaya. Localized exhumation may have ultimately initiated a thermo-mechanical feedback between tectonic uplift and surface erosion that has sustained rapid exhumation rates to the present.

Similar observations of accelerating rock exhumation are observed in lag time studies of Siwalik units proximal to the western Himalayan syntaxis, but not also in studies from across the main Himalayan front. Considering our observations within the context of this broader pattern, we highlight the importance of antecedent river drainage in the development of localized thermo-mechanical feedbacks that may have long-sustained steep topography and high sedimentary discharges at the terminal Himalayan syntaxes.

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4.9 Figures

Figure 4.9.1 Study area in the eastern syntaxis and foreland basin

A. Eastward transition from Himalayan convergence to dextral strike-slip motion in Burma warps tectonic units southward to form the eastern Himalayan syntaxis. The Yarlung River follows the Indus-Yarlung Suture Zone (dashed line) >1000 km along the southern margin of Tibet before abruptly turning southward around Namche Barwa (NB, 7,782 m peak elevation) to bisect the syntaxis to join the Brahmaputra River in the easternmost part of the Himalayan foreland basin (yellow area). B. Within the syntaxis, the Yarlung River drops >2 km through the Tsangpo Gorge (highlighted in red). Regional bedrock thermochronology constrains rapid Plio-Quaternary cooling of the Namche Barwa massif, making the region a unique source of anomalously young cooling ages (pink area encompasses zircon fission track ages <3 Ma, Burg et al., 1998; Seward and Burg, 2008; and biotite $^{40}Ar/^{39}Ar$ ages < 10 Ma, Zeitler et al., 2014). Young cooling ages are also observed in detrital samples collected downstream of the Tsangpo gorge including in samples A, B, C collected from the locally named "Siang" reach of the river (muscovite $^{40}Ar/^{39}Ar$ analyses in this study, zircon fission track from Enkelmann et al., 2011). Sediment leaving the mountains accumulates proximally in the easternmost portion of the Himalayan foreland basin, a narrowly constrained sedimentary basin that thickens toward thrust boundaries (Verma and Mukhopadhyay, 1977). Regional structures dividing tectono-morphic units: MCT = Main Central Thrust, MBT = Main Boundary Thrust, STD = South Tibetan Detachment, MFT = Main Frontal Thrust, TPT = Tipi Thust, MT = Mishmi Thrust, NT = Naga Thrust. Transhimalayan intrusive units in light grey. Regional geology compiled from Armijo et al., 1989; Agarwal et al., 1991;

Baruah et al., 1992; Pan et al., 2004; Acharyya et al., 2007; Misra, 2009; Yin et al., 2010; Zeitler et al. 2014.

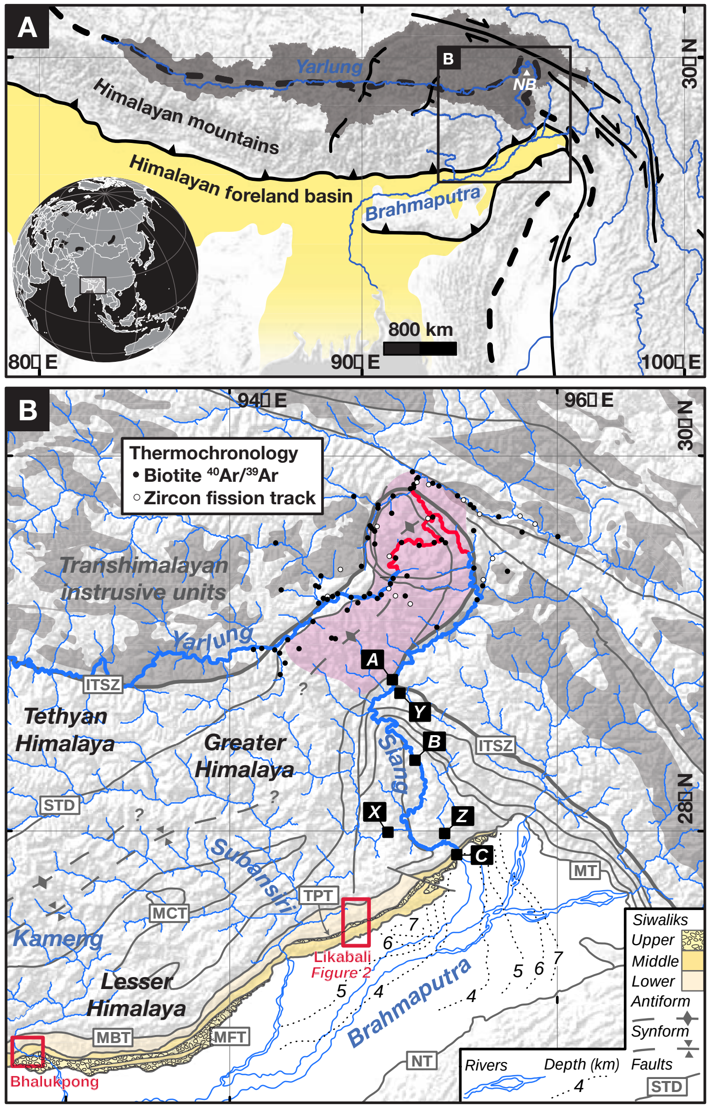

A
Yarlung
Himalayan mountains
Himalayan foreland basin
Brahmaputra
B
NB
800 km
30° N
80° E
90° E
100° E
B
94° E
96° E
30° N
28° N
Thermochronology
• Biotite 40Ar/39Ar
○ Zircon fission track
Transhimalayan
Instrusive units
Yarlung
ITSZ
Tethyan
Himalaya
Greater
Himalaya
Siang
STD
Subansiri
Kameng
MCT
TPT
Lesser
Himalaya
MBT
MFT
Likabali
Figure 2
Bhalukpong
Brahmaputra
NT
MT
A
Y
B
X
Z
C
Siwaliks
Upper
Middle
Lower
Antiform
Synform
Faults
Rivers
Depth (km)
STD

Figure 1.

Figure 4.9.2 Detailed geology of the Siji River area

1:100,000 scale geologic map of the Siji River area from reconnaissance mapping along the Siji River. Bedding measurements define main surveying transect through Upper and Middle Siwaliks for stratigraphy, magnetostratigraphy and detrital sampling. Sample locations from detrital zircon U-Pb samples published by Lang and Huntington (2014) as well as new detrital thermochronology presented in this study.
West-northwest to east-southeast striking faults do not obviously disrupt Siwalik stratigraphy, potentially complicating stratigraphic interpretations of the surveyed transect. Boulder print illustrates approximate extent of growth strata in the Upper Siwalik unit (see text for discussion).

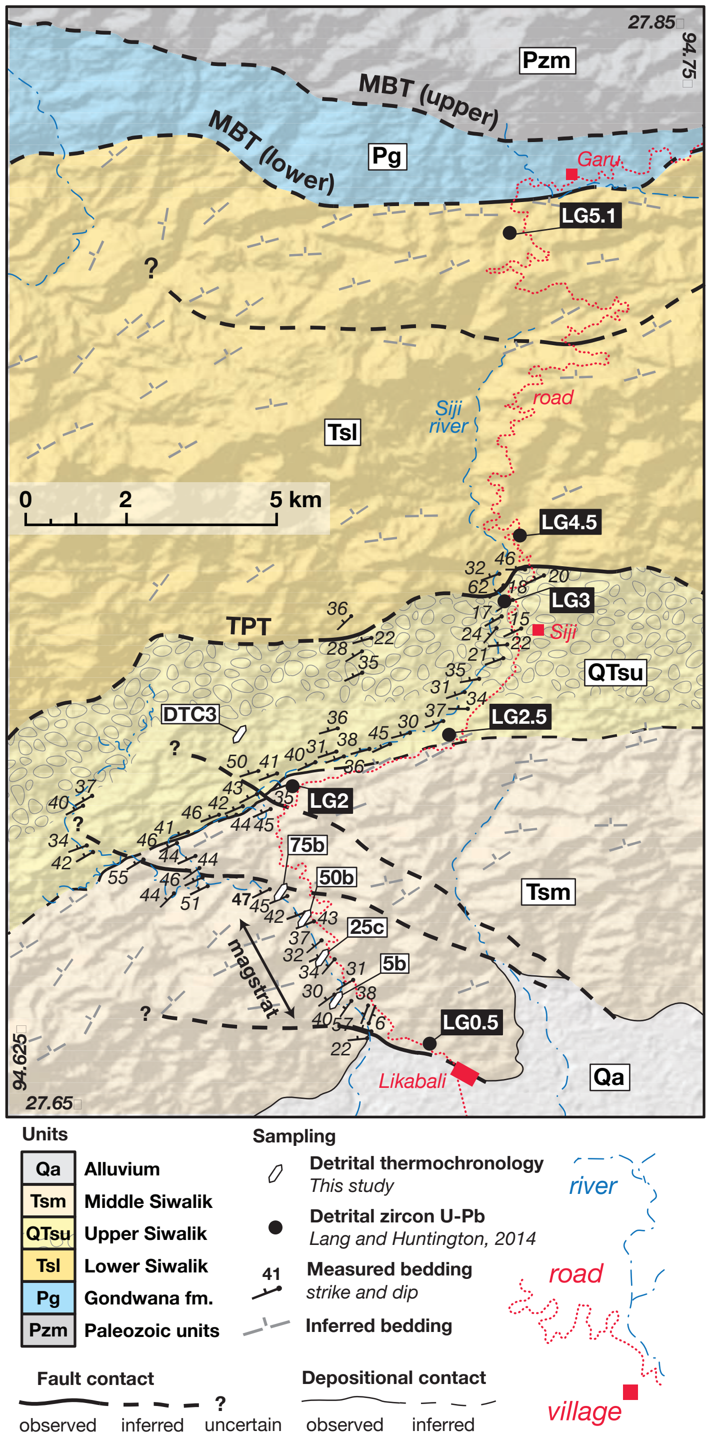
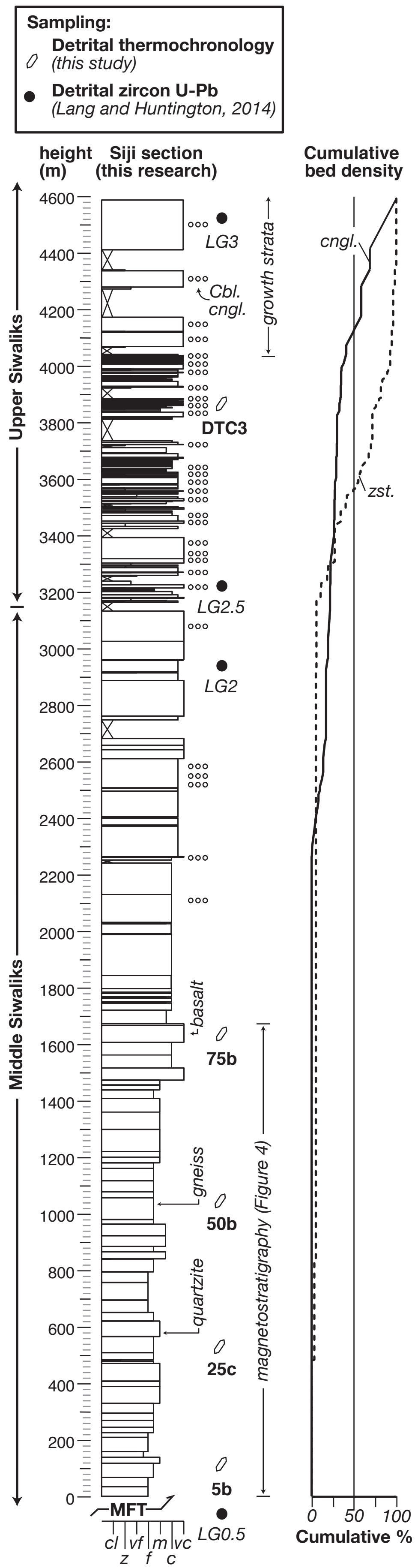

Pzm
MBT (upper)
MBT (lower)
Pg
Garu
LG5.1
road
Siji
river
Tsl
0
2
5 km
LG4.5
LG3
TPT
Siji
QTsu
DTC3
LG2.5
LG2
75b
50b
25c
5b
Tsm
magstrat
LG0.5
Likabali
Qa
27.85
94.75
94.625
27.65
Units
Qa
Alluvium
Tsm
Middle Siwalik
QTsu
Upper Siwalik
Tsl
Lower Siwalik
Pg
Gondwana fm.
Pzm
Paleozoic units
Sampling
Detrital thermochronology
This study
Detrital zircon U-Pb
Lang and Huntington, 2014
41
Measured bedding
strike and dip
Inferred bedding
river
road
village
Fault contact
observed
inferred
uncertain
Depositional contact
observed
inferred

Figure 2.

Figure 4.9.3 Upper and Middle Siwalik stratigraphy in the study area

Stratigraphic section of the Tipi Thrust footwall measured along the Siji River (see Figures 1 and 2 for location). Upper and Middle Siwalik units are an upward coarsening sequence of siltstone, sandstone and conglomerates that we interpret to represent alluvial deposition in a narrowly constrained basin similar to the modern Brahmaputra River valley. The increase in conglomerate in the Upper Siwalik may represent contribution from transverse rivers draining Himalayan units as deposition became more proximal to the mountain front. Shallowing of depositional surfaces in highly oxidized upper conglomerates of the Upper Siwalik indicate deposition during uplift and tilting of underlying units (e.g., growth strata). The first appearance of quartzite, gneiss and basaltic clasts from Himalayan units best exposed along the Siang River valley are shown with the presence of cobble conglomerate beds and the stratigraphic position of samples from this study and Lang and Huntington (2014).

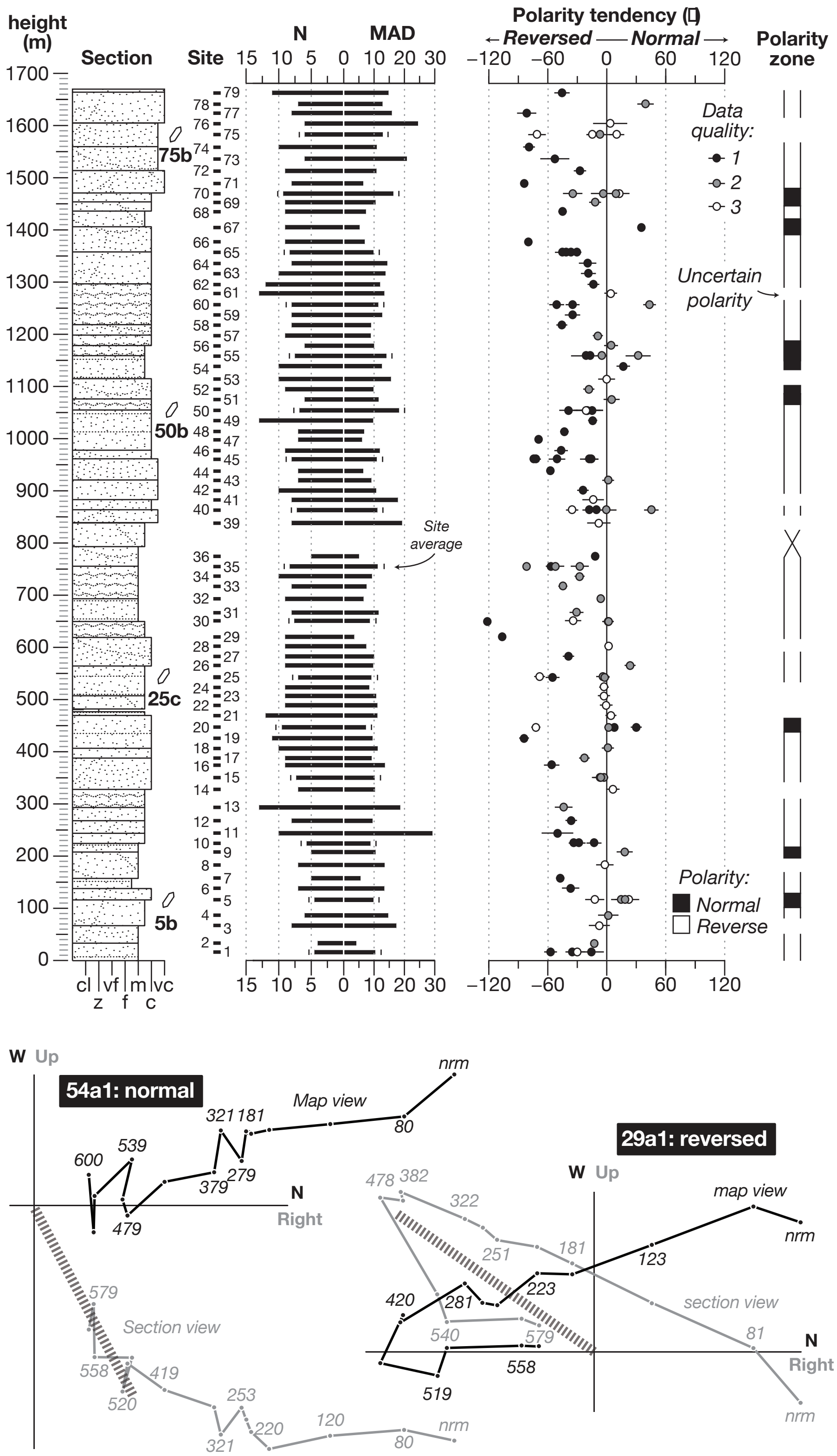


Sampling:
Detrital thermochronology
(this study)
Detrital zircon U-Pb
(Lang and Huntington, 2014)
height (m)
Siji section (this research)
Cumulative bed density
Upper Siwaliks
Middle Siwaliks
LG3
Cbl. cngl.
growth strata
DTC3
LG2.5
LG2
basalt
75b
gneiss
50b
quartzite
25c
5b
magnetostratigraphy (Figure 4)
MFT
LG0.5
cl z vf f m c vc
cngl.
zst.
0 50 100
Cumulative %

Figure 3.

Figure 4.9.4 Magnetostratigraphy of lower Middle Siwalik exposures

Magnetostratigrpahy of the lowest portion of the Middle Siwalik. Stratigraphic position of block samples are shown. Each site has 1-5 specimens. For least squares line fits, N is the number of measurements and MAD is the maximum angular deviation (Kirschvink, 1980). For sites with multiple samples, averages for N and MAD are indicted with tick marks. We used the tendency for the direction to change during demagnetization toward a normal (259.5° declination, 46.7° inclination) or reverse direction in tilt-corrected coordinates as an indication of polarity. See text for discussion of data quality and precision. We did not observe evidence for any long normal polarity zones in this portion of the section (e.g., C5n.2n from 9.9-11.0 Ma). Orthogonal projections of characteristic demagnetization paths onto horizontal (map view) and south-north vertical plane (section view) for specimens with normal (54a1) and reverse (29a2) polarity. Individual measurements are labeled from the natural remnant magnetism (nrm) with temperature in °C. The higher temperature segments are interpreted to be original magnetizations because their inclinations (dashed lines) are closer to that expected for the magnetic field in tilt-corrected coordinates (as shown) than before tilt correction.

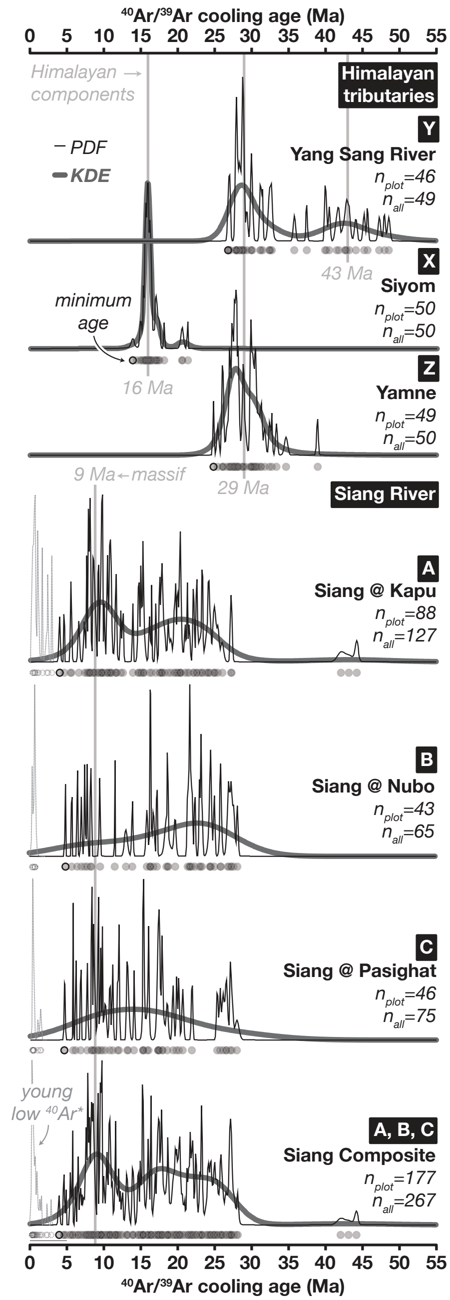


height (m)
Section
Site
N
MAD
Polarity tendency
Reversed
Normal
Polarity zone
75b
50b
25c
5b
Site average
Data quality:
1
2
3
Uncertain polarity
Polarity:
Normal
Reverse
cl vf m vc
z f c
54a1: normal
Map view
Section view
29a1: reversed
map view
section view
W Up
N Right
nrm

Figure 4.

Figure 4.9.5 Detrital muscovite $^{40}Ar/^{39}Ar$ thermochronology of river sediment

Detrital muscovite $^{40}Ar/^{39}Ar$ cooling ages from river sediment samples (see Figure 1 for sample locations). Cooling ages from Himalayan tributaries are older than 13 Ma with narrowly defined age populations at ~16, characteristic of Greater Himalayan exhumation on the Main Central Thrust; ~29 indicating Oligocene exhumation of units along the suture zone; and ~43 Ma, cooling of Transhimalayan intrusives north of the suture zone. Cooling ages from three Siang River samples span a wider range. We interpret the addition of younger (~9 Ma) ages to represent contribution from more rapidly cooled bedrock of the Namche Barwa massif. Extremely young ages with low radiogenic argon ($^{40}Ar^*$) may be derived from the Tsangpo Gorge specifically (Zeitler et al., 2014). Cooling ages older than 55 Ma are considered precursory to the Himalayan orogeny and not included in data plots. The total number of single grain analyses (n_{all}) and the number of analyses plotted (n_{plot}) are stated for each sample. Area normalized, summed probability density functions are plotted as thin black lines and kernel density estimates are plotted as thick grey lines. Kernel density estimation and cooling age peak discrimination was determined using the DensityPlotter application of Vermeesch (2012).

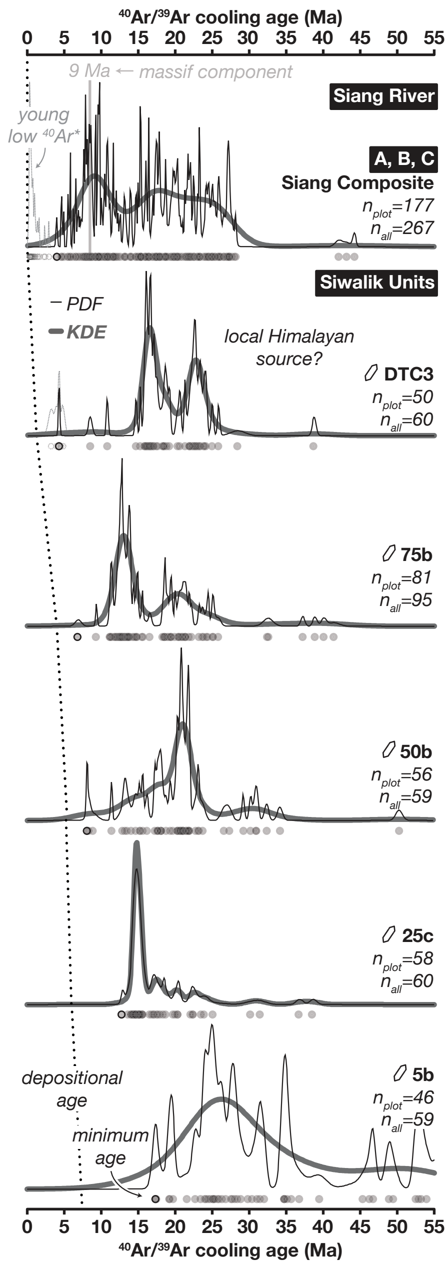


$^{40}Ar/^{39}Ar$ cooling age (Ma)
0 5 10 15 20 25 30 35 40 45 50 55
Himalayan → components
Himalayan tributaries
Y
PDF
KDE
Yang Sang River
n_{plot}=46
n_{all}=49
43 Ma
X
Siyom
minimum age
n_{plot}=50
n_{all}=50
16 Ma
Z
Yamne
n_{plot}=49
n_{all}=50
9 Ma←massif
29 Ma
Siang River
A
Siang @ Kapu
n_{plot}=88
n_{all}=127
B
Siang @ Nubo
n_{plot}=43
n_{all}=65
C
Siang @ Pasighat
n_{plot}=46
n_{all}=75
young low $^{40}Ar^*$
A, B, C
Siang Composite
n_{plot}=177
n_{all}=267
0 5 10 15 20 25 30 35 40 45 50 55
$^{40}Ar/^{39}Ar$ cooling age (Ma)

Figure 5.

Figure 4.9.6 Detrital muscovite $^{40}Ar/^{39}Ar$ thermochronology of Siwalik units

Detrital muscovite $^{40}Ar/^{39}Ar$ cooling ages from Upper and Middle Siwalik samples compared to modern samples from the Siang River. Cooling ages are plotted in the same fashion as in Figure 5. The Upper Siwalik sample is dominated by cooling ages characteristic of Himalayan units, but also includes a few younger ages charachteristic of the Namche Barwa massif. We interpret the predominance of Himalayan ages to represent increased contribution from local Himalayan sources following removal of this depositional sequence from an axial basin depocenter or recycling of Siwalik units. Detrital samples from lower stratigraphic levels contain younger age components, with the exception of sample 5b. Minimum single grain ages decrease up section from 13 to 6 Ma and grain age density is variable, potentially reflecting changes in source erosion patterms. The lowest sample 5b, contains much older ages similar to those observed in Himalayan tributaries draining the suture zone. These ages may reflect erosion of suture zone and northern plutonic source rocks potentially prior to exhumation of the Namche Barwa massif.

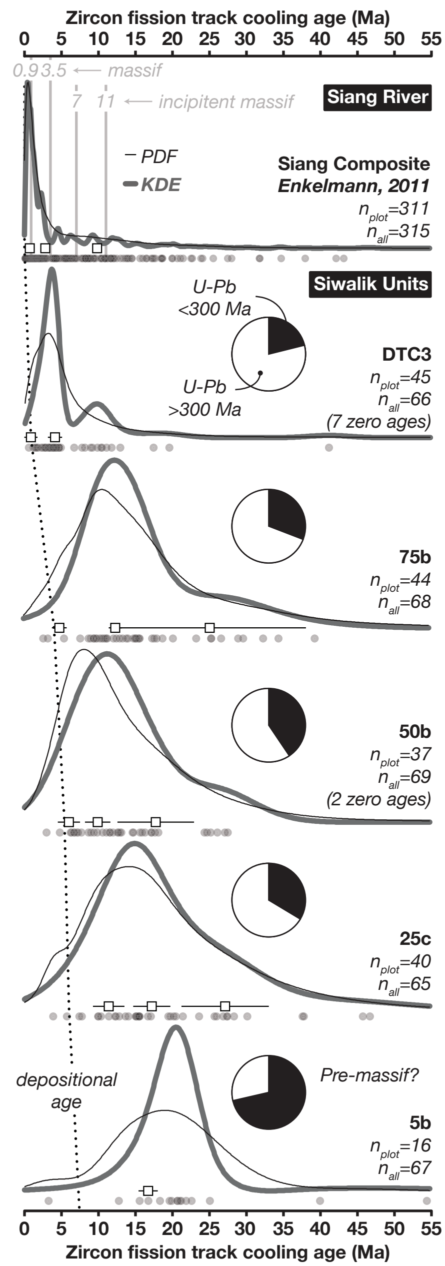


40Ar/39Ar cooling age (Ma)
0 5 10 15 20 25 30 35 40 45 50 55
9 Ma ← massif component
Siang River
young
low 40Ar*
A, B, C
Siang Composite
n_plot=177
n_all=267
Siwalik Units
PDF
KDE
local Himalayan
source?
DTC3
n_plot=50
n_all=60
75b
n_plot=81
n_all=95
50b
n_plot=56
n_all=59
25c
n_plot=58
n_all=60
depositional
age
minimum
age
5b
n_plot=46
n_all=59
0 5 10 15 20 25 30 35 40 45 50 55
40Ar/39Ar cooling age (Ma)

Figure 6.

Figure 4.9.7 Coupled detrital zircon fission-track and U-Pb analyses of Siwalik units

Fission track cooling ages of U-Pb dated detrital zircons from Upper and Middle Siwalik samples compared with ages from the Siang River (Enkelmann, 2012). Plots only show cooling ages from zircons with >300 Ma crystallization ages, filtering out ages from Transhimalayan sources in Tibet. Cooling ages are plotted in the same fashion as in Figure 5. Ages older than 55 Ma are considered pre-orogenic and not plotted. Fission track age components determined with the DensityPlotter application of Vermeesch (2012) are plotted as white boxes. The Upper Siwalik sample DTC3 is dominated by young cooling ages, similar to analyses from the Siang River. The youngest age component in Middle Siwalik samples decreases up section, and reach within ~3 Ma of the depositional age by sample 50b. Notably, the lowest sample 5b is dominated by zircons with a Transhimalayan intrusive source in Tibet, supporting the hypothesis that muscovite $^{40}Ar/^{39}Ar$ ages from this sample reflect contribution from erosion of the suture zone and northern Transhimalayan units prior to massif exhumation.

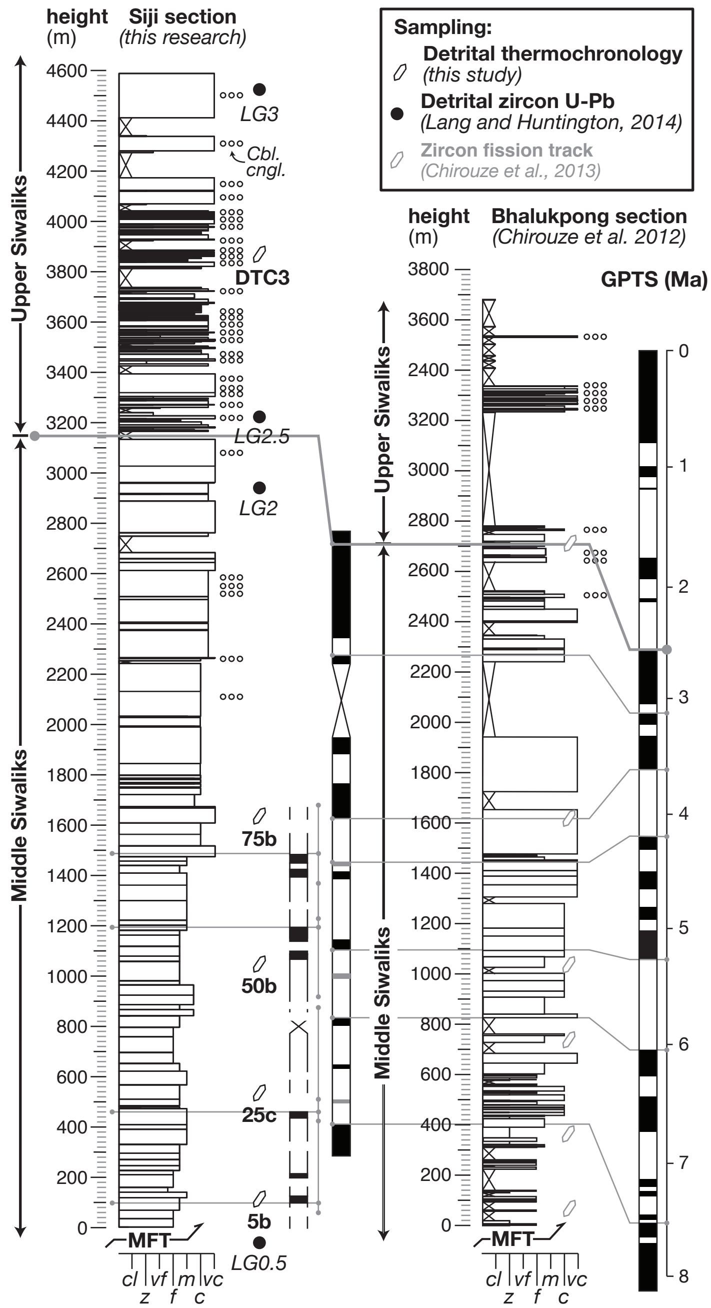


Zircon fission track cooling age (Ma)
0.9 3.5 ← massif
7 11 ← incipitent massif
Siang River
PDF
KDE
Siang Composite
Enkelmann, 2011
n plot=311
n all=315
Siwalik Units
U-Pb
<300 Ma
U-Pb
>300 Ma
DTC3
n plot=45
n all=66
(7 zero ages)
75b
n plot=44
n all=68
50b
n plot=37
n all=69
(2 zero ages)
25c
n plot=40
n all=65
depositional
age
Pre-massif?
5b
n plot=16
n all=67
Zircon fission track cooling age (Ma)

Figure 7.

Figure 4.9.8 Correlation of the Siji River and Bhalukpong sections

Correlation of stratigraphic sections between the Siji River and Kameng River (near Bhalukpong, Chirouze et al., 2012) sections. Within the approximately 4-8 Ma sequence from the Kameng River, we observe similar up section coarsening trends as Chirouze et al. (2012) and a similar absence of long normal polarity zones. Depositonal ages are further constrained by the minimum detrital zircon fission track age components observed at both sections. We conservatively correlate the Upper-Middle Siwalik contact where the frequency of siltsone beds increase to the estimated 2-3 Ma age from Chirouze et al. (2012).

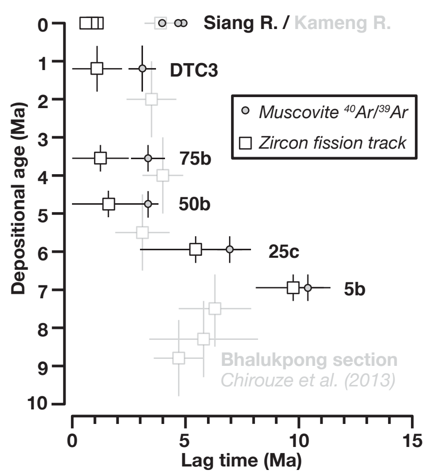


height (m)
Siji section
(this research)
Sampling:
Detrital thermochronology
(this study)
Detrital zircon U-Pb
(Lang and Huntington, 2014)
Zircon fission track
(Chirouze et al., 2013)
Upper Siwaliks
Middle Siwaliks
LG3
Cbl. cngl.
DTC3
LG2.5
LG2
75b
50b
25c
5b
LG0.5
MFT
cl z vf f m c vc
height (m)
Bhalukpong section
(Chirouze et al. 2012)
GPTS (Ma)

Figure 8.

Figure 4.9.9 Thermochronologic lag time in Siwalik samples

Thermochronologic lag time calculated form youngest cooling age components (fission track, white squares) and single grain ages ($^{40}Ar/^{39}Ar$, grey circles). New samples from the Siji River section are outlined in black (Siang River samples from Enklemann et al., 2011) while samples collected near Bhalukpong are light grey (Chirouze et al., 2013). In both new thermchronologic datasets, lag time decreases up section in the lowest three samples and then remains within or below the range of lag times presently observed in Siang River sediment. In contrast, lag time from Bhalukpong decreases between 6-7 Ma but remains older than samples observed in the Siji River section.

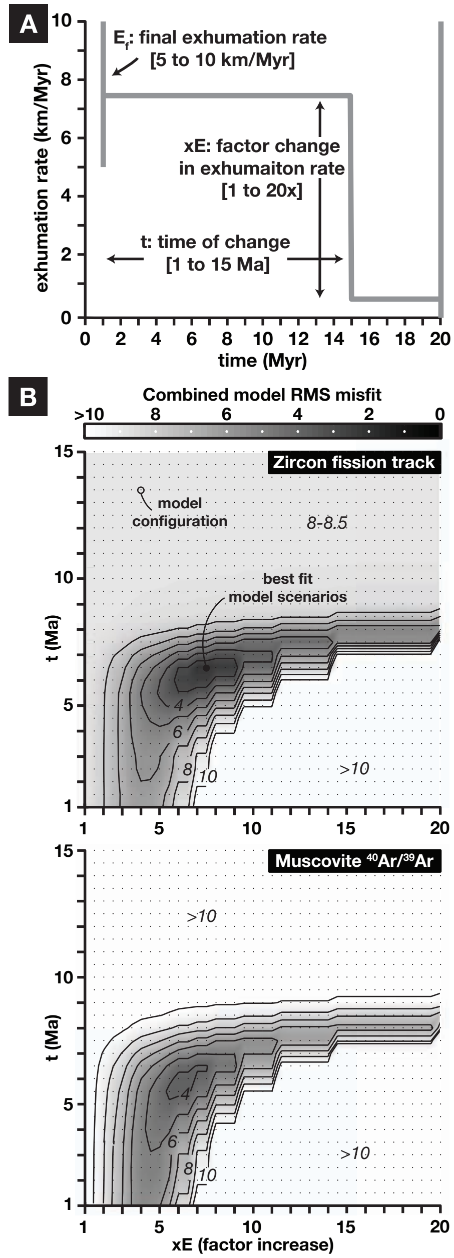


Siang R. / Kameng R.
DTC3
75b
50b
25c
5b
Muscovite $^{40}Ar/^{39}Ar$
Zircon fission track
Bhalukpong section
Chirouze et al. (2013)
Depositional age (Ma)
Lag time (Ma)
0
1
2
3
4
5
6
7
8
9
10
0
5
10
15

Figure 9.

Figure 4.9.10 Quantitative constraints from thermal modeling

One dimensional thermal modeling of thermochronologic lag time. **A.** Model scenarios of a step-increase in exhumation rate of the source region varied the factor (xE) and time (t) of exhumation rate increase. Final exhumation rate (E_f) was fixed between 5 and 10 km/Ma. **B.** Contoured plots of root-mean-squared (RMS) misfit between predicted and observed observed lag time. Both thermochronologic datasets are best explained by a ~5-10 fold increase in exhumation rate between 5-7 Ma. Each gridded point represents an individual model scenario. Misfit is summed over six sets of model output for final exhumation rates (E_f) between 5-10 km/Ma.



A
E_f: final exhumation rate
[5 to 10 km/Myr]
xE: factor change
in exhumaiton rate
[1 to 20x]
t: time of change
[1 to 15 Ma]
exhumation rate (km/Myr)
time (Myr)
B
Combined model RMS misfit
>10
8
6
4
2
0
Zircon fission track
model
configuration
8-8.5
best fit
model scenarios
t (Ma)
>10
Muscovite 40Ar/39Ar
xE (factor increase)

Figure 10.

Figure 4.9.11 Exhumation history of the Namche Barwa massif

Cartoon illustrating the proposed exhumation history of the Namche Barwa massif. Active structures are illustrated in black, unactive structures are light grey. Knickzone within zone of rapid exhumation highlighted in white. **A.** Late Miocene duplexing in the footwall of the Main Central Thrust folds and uplifts Greater Himalayan units in the MCT hangingwall across the eastern Himalaya (Yin et al., 2010). Transverse rivers erode headward and the antecedent course of the ancestral Yarlung-Siang-Brahmaputra begins to incise across the regional antiform. **B.** By 5 Ma, rapid exhumation by the antecedent river has initiated a thermo-mechanical feedback, focusing strain within the eastern syntaxis, exhuming the Namche Barwa massif and warping the Indus-Yarlung suture zone (IYSZ) northward. **C.** Northward migration of the massif captures and reverses flow in the Parlung River within the Quaternary, enhancing exhumation within the present Tsangpo Gorge region (Seward and Burg, 2008).

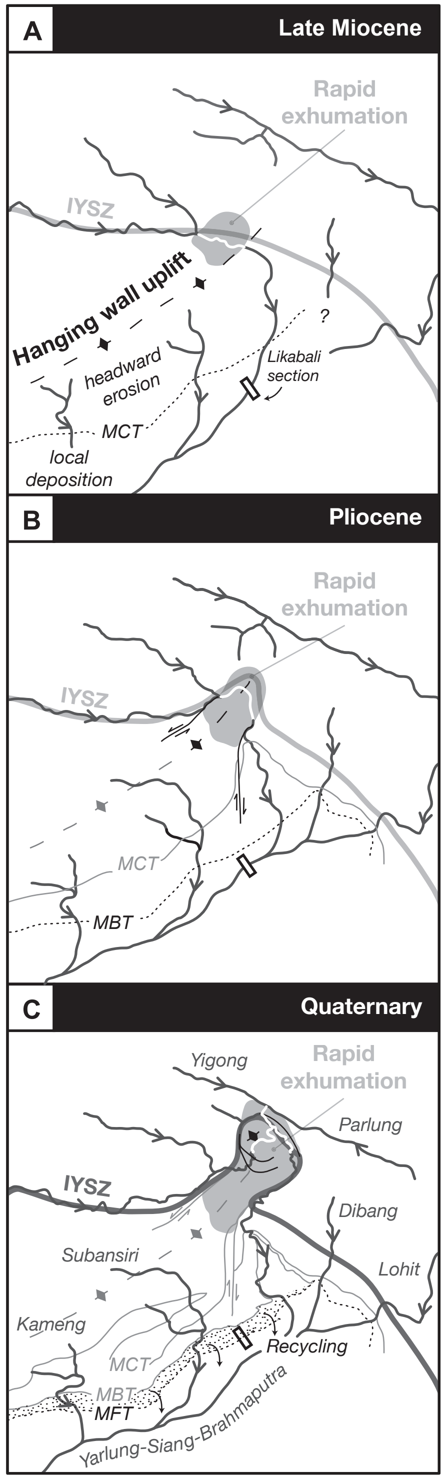
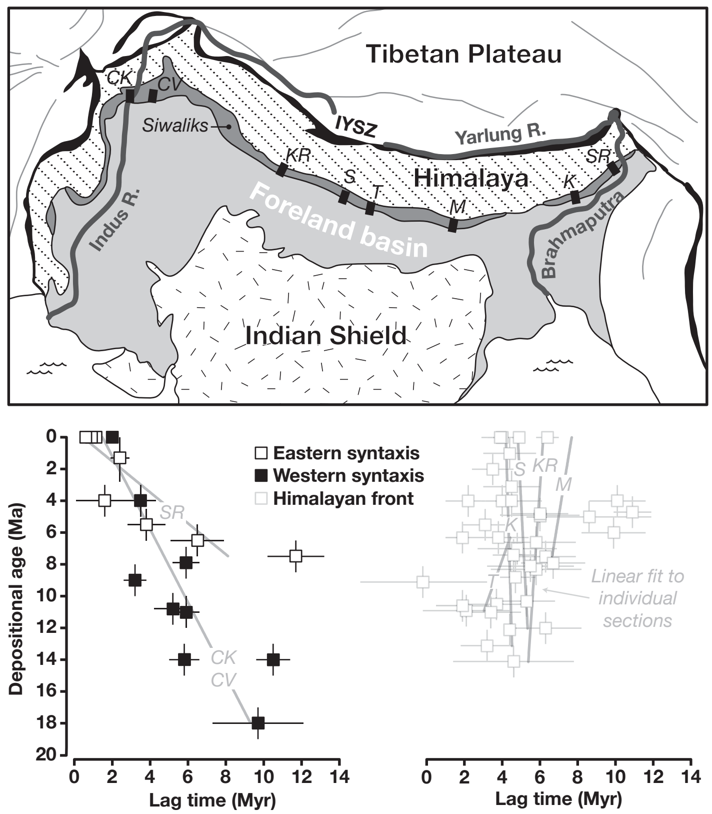

A
Late Miocene
Rapid exhumation
IYSZ
Hanging wall uplift
headward erosion
?
Likabali section
MCT
local deposition
B
Pliocene
Rapid exhumation
IYSZ
MCT
MBT
C
Quaternary
Yigong
Rapid exhumation
Parlung
IYSZ
Dibang
Subansiri
Lohit
Kameng
Recycling
MCT
MBT
MFT
Yarlung-Siang-Brahmaputra

Figure 11.

Figure 4.9.12 Compilation of Himalayan lag time data

Compilation of lag time data from Siwalik units across the Himalaya. Location of sections are illustrated on simplified map of tectonic and foreland units (Crittelli and Garzanti, 1994). Lag time is calculated from minimum zircon fission track age components for all sections, linear fits are added to show general trend of data from each section individually. Lag time data from Siwalik sections proximal to the Himalayan syntaxes (CK = Chani Khel, CV = Chinji Village, Cerveny et al., 1988; SR = Siji River, this study) indicate a decrease in lag time up section, whereas lag time data from sections along the Himalayan front do not decrease up section (KR = Karnali River, S = Surai Khola, T = Tinau Khola, Bernet et al., 2006; M = Muksar Khola, Chirouze et al., 2012b; K = Kameng River, Chirouze et al. 2013). We interpret the variation in exhumation history to reflect a local acceleration of exhumation where antecedent rivers cross through the Himalayan syntaxes.



Tibetan Plateau
CK
CV
Siwaliks
IYSZ
Yarlung R.
KR
S
T
Himalaya
M
K
SR
Indus R.
Foreland basin
Brahmaputra
Indian Shield
Eastern syntaxis
Western syntaxis
Himalayan front
Depositional age (Ma)
Lag time (Myr)
SR
CK
CV
S
KR
M
K
T
Linear fit to individual sections

Figure 12.

4.10 Tables

4.10.1 Sample data

TABLE A1. SAMPLE DATA AND ZFT AGE CLUSTERING.

Sample ID	Latitude (Degrees N)	Longitude (Degrees E)	Siwalik Unit	Height above base (m)	Approximate depositional age (Ma)
Siwalik samples					
DTC3	27.718442	94.668658	Upper	3870	0.6 - 1.8
75b	27.690301	94.673102	Middle	1640	3.2-3.9
50b	27.685349	94.678618	Middle	1060	4.4-5.1
25c	27.678317	94.682618	Middle	540	5.6-6.3
5b	27.670815	94.683994	Middle	120	6.6-7.3
Siang River samples					
SIANG R. @ KAPU	29.048672	94.910801			modern
SIANG R. @ NUBO	28.576655	95.070195			modern
SIANG R. @ PASIGHAT	28.098664	95.293839			modern
Himalayan tributary samples					
YANG SANG R.	28.977366	94.904728			modern
YAMNE R.	28.186037	95.222736			modern
SIYOM R.	28.219327	94.865888			modern

4.10.2 Magnetostratigraphy

Table A1. Magnetostratigraphic data. Overprint references is 0 dec. 43.6 inc. N reference polarity is 359.5 dec. 46.7 inc.

Site information			Bedding		n	Maximium angular deviation	Angle from overprint (0 dec. 43.6 inc.)	Precision estimate	Beginning measurement				End measurement			
Site ID	Specimen ID	Height above base (m)	Strike	Dip					dec.	inc.	Angle from N reference	Angle from overprint	dec.	inc.	Angle from N reference	Angle from overprint
1	1a1b	15.8	243.8	46.5	3	7.0	23.5	a	358.5	-6.1	52.8	23.5	338.7	-39.3	88.0	59.4
1	1b1	15.8	243.8	46.5	5	8.4	24.3	6.5	340.1	-0.4	50.1	24.3	246.9	-2.8	107.4	95.9
1	1c1	15.8	243.8	46.5	5	16.4	14.4	12.7	333.1	-5.9	57.5	11	315.3	-26.2	73.3	53.0
1	1d2	15.8	243.8	46.5	5	10.3	21.6	8.0	334.9	-1.7	53.0	14.4	334.6	-6.1	83.1	27.1
2	2a	33	243.8	46.5	4	4.2	11.0	3.6	349.1	3.1	44.5	21.6	350.8	-26.2	57.3	46.9
3	3a1	66.8	243.8	46.5	8	17.5	24.7	10.7	347.8	-2.8	50.6	24.7	345.5	-10.2	58.3	28.2
4	4a1	86.3	243.8	46.5	6	14.8	19.1	10.4	351.4	4.4	42.9	19.1	334.5	11.0	41.5	16.2
5	5a1	116.3	243.8	46.5	4	16.6	20.8	14.3	358.0	4.4	42.3	20.8	19.9	29.1	23.7	30.4
5	5c1	116.3	243.8	46.5	5	8.4	12.0	6.5	329.5	-19.2	71.3	12	320.2	1.3	56.8	33.1
5	5d1	116.3	243.8	46.5	5	12.6	9.6	9.7	343.4	-1.8	50.5	9.6	335.9	-12.5	62.9	31.3
5	5b1	116.3	243.8	46.5	4	1.8	2.3	1.6	352.4	22.0	25.4	2.3	0.9	43.7	3.1	29.9
6	6a1b	138	250.3	53.8	7	13.5	24.8	8.8	356.9	8.2	38.6	24.8	289.4	1.3	75.5	61.9
7	7a1	157.5	250.3	53.8	5	5.6	10.8	4.3	351.8	10.8	36.5	10.8	281.9	-3.4	84.0	69.3
8	8a1	183	247.0	48.0	7	13.6	20.2	8.9	356.9	4.1	42.6	20.2	23.8	7.2	44.7	34.3
9	9a2	207.8	247.0	48.0	5	10.6	30.7	8.2	357.0	-4.3	51.1	30.7	15.9	16.6	33.0	30.7
10	10a1	224.3	247.0	48.0	6	9.7	8.6	6.8	333.2	10.3	42.7	8.6	299.7	-1.8	71.2	48.1
10	10b1	224.3	247.0	48.0	5	9.8	14.4	7.6	344.1	1.6	47.0	14.4	325.1	-5.1	60.1	30.5
10	10d1	224.3	247.0	48.0	6	7.2	20.7	5.1	343.3	1.1	47.7	20.7	290.7	-7.6	81.5	58.8
11	11a1	243.8	247.0	48.0	10	29.5	22.7	16.1	351.8	-15.2	62.3	22.7	268.0	-30.4	112.6	89.2
12	12a1	267.8	244.0	48.3	8	9.6	15.4	5.9	343.0	1.3	47.6	15.4	346.0	-36.4	83.9	59.0
13	13a1	293.3	244.0	48.3	13	18.8	34.8	9.0	5.2	18.5	28.6	34.8	281.5	12.7	72.6	65.2
14	14a1	327.8	250.0	45.3	7	10.4	17.1	6.8	348.6	3.6	44.2	17.1	350.9	9.3	38.1	7.3
15	15b1	350.3	250.0	45.3	8	12.5	11.2	7.6	20.6	37.7	17.9	11.2	24.8	66.9	24.1	56.1
15	15c1	350.3	250.0	45.3	6	11.7	17.2	8.3	358.1	-2.0	48.7	17.2	19.7	-6.1	55.7	38.1
15	15d2b	350.3	250.0	45.3	8	6.7	6.4	4.1	341.3	18.6	31.9	6.4	312.9	38.1	34.9	38.0
16	16a1	374.3	250.0	45.3	9	13.7	26.4	7.9	343.2	36.0	16.2	26.4	280.6	13.8	72.4	50.3
17	17a1	387.8	250.0	45.3	9	9.3	10.3	5.4	340.6	7.0	42.9	10.3	297.2	7.4	65.8	50.4
18	18a1	406.5	250.0	43.7	10	11.3	20.2	6.2	14.3	7.8	40.9	20.2	45.0	28.2	39.9	53.9
19	19a1b	426	250.0	43.7	11	9.6	11.8	5.0	352.1	12.8	34.5	11.8	207.8	9.0	118.8	132.0
20	20a1	447	250.0	43.7	10	3.6	17.7	2.0	349.2	13.5	34.3	17.7	319.5	48.8	26.7	35.2
20	20b1	447	250.0	43.7	12	11.2	23.8	5.6	259.5	1.1	96.0	23.8	297.1	7.1	66.1	47.4
20	20d1	447	250.0	43.7	9	8.1	19.8	4.7	353.4	23.9	23.3	19.8	308.1	-37.1	95.6	66.4
20	20c2	447	250.0	43.7	7	6.8	86.5	4.4	251.4	7.1	96.9	86.5	266.0	-3.7	95.1	80.3
21	21a1	469.5	250.0	43.7	12	11.2	21.7	5.6	9.0	5.3	42.2	21.7	24.1	14.6	38.1	38.3
22	22a1	489	250.0	43.7	9	11.2	19.5	6.5	11.3	-3.4	51.1	19.5	9.4	-4.4	51.8	16.7
23	23a1	507	246.7	45.3	9	10.8	6.2	6.2	345.5	19.2	29.8	6.2	4.4	14.2	32.8	14.0
24	24a1	523.5	246.7	45.3	9	8.5	8.4	4.9	351.0	14.4	33.1	8.4	334.7	17.0	36.1	15.4
25	25a1	542.3	247.0	50.4	9	8.4	13.6	4.8	155.5	64.1	67.6	13.6	105.5	41.9	69.8	100.7
25	25b1	542.3	247.0	50.4	6	10.0	47.2	7.1	2.5	-2.4	49.2	47.2	345.3	-57.1	104.5	69.1
25	25d1	543.8	247.0	50.4	8	11.2	11.4	6.8	29.3	40.6	22.3	11.4	36.9	43.2	26.4	51.6

25	25c1	543.8	247.0	50.4	5	7.1	55.3	5.5	59.6	72.4	37.2	55.3	136.7	16.8	105.7	136.9
26	26a1	565.5	245.5	45.2	9	9.8	7.4	5.6	352.3	14.0	33.2	7.4	347.6	42.1	9.6	30.2
27	27a1	582.8	250.0	43.0	9	10.1	7.1	5.8	344.1	19.0	30.5	7.1	278.6	19.7	69.6	73.0
28	28a1	602.3	250.0	43.0	9	7.5	16.4	4.3	8.8	3.9	43.6	16.4	54.6	35.9	41.9	61.4
29	29a1	620.3	253.7	42.3	9	3.5	5.7	2.0	324.8	-0.8	56.4	5.7	188.5	-31.2	163.0	155.8
30	30a1	651	253.7	42.3	8	13.6	2.6	8.3	350.9	4.6	42.7	2.6	0.4	-30.3	77.1	40.9
30	30b1	649.5	253.7	42.3	7	7.7	7.5	5.0	349.3	0.7	46.8	7.5	29.4	9.4	45.1	40.2
30	30c1	649.5	253.7	42.3	5	3.1	10.8	2.4	356.0	7.6	39.2	10.8	162.8	-32.3	160.8	156.0
30	30e1	649.5	253.7	42.3	9	8.9	12.8	5.1	256.4	-2.2	100.6	12.8	252.6	3.1	99.1	95.4
30	30f1	649.5	253.7	42.3	9	10.3	5.9	5.9	347.7	9.1	38.9	5.9	354.1	9.2	37.8	5.5
31	31a1	666.8	237.5	43.5	8	11.6	10.5	7.1	11.2	-19.3	66.9	10.5	37.1	-45.4	97.8	59.0
32	32a1	693	237.5	43.5	9	6.6	6.6	3.8	350.7	-1.1	48.4	6.6	356.9	-7.9	54.7	20.0
33	33a1	717	237.5	43.5	8	7.6	13.9	4.6	7.1	20.8	26.7	13.9	69.6	6.8	71.5	76.4
34	34a1	736.5	237.5	43.5	10	9.4	3.7	5.1	349.2	10.3	37.4	3.7	339.4	-15.9	65.2	29.7
35	35b1	755.3	241.2	43.2	8	15.1	5.3	9.2	265.8	71.7	47.4	5.3	172.4	58.2	75.0	111.2
35	35d1	755.3	241.2	43.2	8	5.6	7.7	3.4	8.2	3.6	43.8	7.7	139.6	-4.5	125.6	147.4
35	35a1b	755.3	241.2	43.2	8	8.7	2.1	5.3	326.0	-9.2	63.3	2.1	283.8	-55.4	120.2	86.9
35	35c1	755.3	241.2	43.2	9	15.7	6.7	9.0	312.5	-0.9	62.9	6.7	271.8	-38.1	115.3	89.0
36	36a2	774.8	241.2	43.2	5	5.1	7.9	3.9	14.7	24.4	25.3	7.9	41.5	28.5	37.3	49.5
37	37a	792.8	241.2	43.2	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
38	38a	811.5	241.2	43.2	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
39	39a1	838.5	241.0	48.0	8	19.4	4.9	11.9	358.5	14.0	32.7	4.9	349.0	6.8	40.9	6.6
40	40a1	863.3	241.0	48.0	6	7.4	22.0	5.2	8.5	28.8	19.2	22	321.7	36.4	29.8	46.2
40	40b1	863.3	241.0	48.0	7	15.9	18.4	10.4	324.8	23.3	36.3	18.4	303.3	49.3	36.9	64.7
40	40c1	863.3	241.0	48.0	5	8.9	7.5	6.9	46.9	6.3	57.3	7.5	75.5	7.1	75.3	84.0
40	40d1	863.3	241.0	48.0	9	12.8	4.9	7.4	325.2	8.1	48.4	4.9	2.9	49.0	3.2	50.5
40	40e1	863.3	241.0	48.0	9	10.9	34.3	6.3	9.9	24.2	24.0	34.3	355.8	-12.6	59.4	12.8
41	41a1	882.8	233.5	35.0	8	18.0	11.6	11.0	344.7	-9.9	58.2	11.6	321.3	-16.8	72.2	34.0
42	42a1	900.8	233.5	35.0	10	10.8	3.7	5.9	3.4	5.5	41.4	3.7	56.7	3.1	65.8	64.9
43	43a1	920.3	241.3	36.0	7	9.2	5.9	6.0	4.7	17.3	29.7	5.9	37.2	39.1	28.4	54.2
44	44a1	938.3	241.3	36.0	7	6.5	15.4	4.2	333.8	2.8	49.2	15.4	269.7	-23.4	106.7	84.2
45	45e1b	960.8	241.3	36.0	9	6.3	8.7	3.6	17.3	6.1	43.4	8.7	112.7	-16.6	117.8	120.8
45	45a1	960.8	241.3	36.0	8	13.9	5.4	8.5	16.9	13.1	36.6	5.4	94.9	8.6	87.4	102.5
45	45b1	960.8	241.3	36.0	6	13.3	13.6	9.4	344.7	41.6	11.8	13.6	5.1	76.4	29.8	72.9
45	45c1	960.8	241.3	36.0	7	8.0	6.8	5.2	301.0	13.1	59.1	6.8	204.7	-3.3	131.4	147.0
45	45d1	960.8	241.3	36.0	10	13.5	20.0	7.4	20.4	-27.1	76.2	20	248.4	15.9	92.2	101.7
46	46a2	977.3	241.0	35.7	9	12.0	5.0	6.9	327.8	14.0	42.1	5	242.1	25.1	88.7	104.6
47	47a1b	998.3	241.7	35.0	7	6.1	5.3	4.0	335.3	14.1	38.3	5.3	236.4	5.2	107.9	113.4
48	48a1	1014	241.7	35.0	7	6.8	9.4	4.4	346.6	7.8	40.4	9.4	297.7	-15.9	83.6	56.1
49	49a1	1035	230.0	56.5	13	9.8	61.9	4.7	40.4	-33.7	88.4	61.9	78.8	-27.4	102.9	90.6
50	50a2b	1054.5	231.3	40.7	9	23.2	16.4	13.4	34.5	-4.1	59.4	16.4	59.2	-12.3	79.5	65.1
50	50b1	1054.5	231.3	40.7	4	11.8	15.1	10.2	1.7	3.3	43.4	15.1	30.1	-11.9	64.7	37.3
50	50b2	1054.5	231.3	40.7	8	26.5	117.4	16.2	199.4	48.1	83.7	117.4	171.4	29.1	103.8	148.2
50	50c1	1054.5	231.3	40.7	6	13.3	10.7	9.4	325.2	40.8	25.2	10.7	258.5	46.1	64.3	93.0
50	50d1	1054.5	231.3	40.7	7	17.3	24.9	11.3	337.0	13.5	38.2	24.9	316.8	7.8	53.3	38.8
51	51a1	1075.5	235.0	34.3	6	11.6	12.1	8.2	359.1	18.7	28.0	12.1	9.1	24.8	23.2	26.0

52	52a1b	1095	247.0	36.7	9	9.9	10.9	5.7	337.8	33.0	21.5	10.9	299.8	46.8	39.9	64.8
53	53a1b	1114.5	247.0	36.7	10	15.7	32.6	8.6	353.4	-27.1	74.0	32.6	11.7	-26.8	74.3	33.5
54	54a1	1139.3	232.0	37.0	10	12.7	12.6	6.9	349.5	24.8	23.4	12.6	4.8	52.5	6.7	52.4
55	55a1	1158.8	232.0	37.0	9	6.2	7.1	3.6	72.8	71.4	41.2	7.1	68.9	25.1	58.2	78.7
55	55b1	1158.8	232.0	37.0	8	24.8	16.3	15.2	65.3	-1.6	74.9	16.3	94.7	-3.6	96.2	100.9
55	55d1	1158.8	232.0	37.0	8	9.1	13.2	5.6	284.1	70.2	42.0	13.2	312.8	18.7	47.2	46.2
55	55e2	1158.8	232.0	37.0	5	16.6	6.6	12.8	352.6	10.4	36.8	6.6	356.4	42.2	5.0	46.5
56	56a1	1178.3	234.7	35.3	6	10.1	6.2	7.1	348.2	13.7	34.3	6.2	324.6	32.4	30.1	41.7
57	57a1	1197.8	234.7	35.3	9	9.0	9.2	5.2	357.1	-7.6	54.3	9.2	342.8	-15.0	63.5	18.9
58	58a1b	1218	252.0	41.0	8	9.1	26.6	5.6	356.6	-22.8	69.5	26.6	296.0	-55.7	115.4	74.3
59	59a1	1237.5	215.5	33.8	8	12.8	18.0	7.8	347.0	12.4	35.9	18	268.5	27.6	70.9	85.6
60	60a1	1257	215.5	33.8	6	10.8	26.0	7.6	357.1	49.4	3.1	26	86.5	50.5	54.2	90.0
60	60b1	1257	215.5	33.8	9	11.3	8.4	6.5	286.5	21.2	63.2	8.4	342.5	31.8	19.8	32.1
60	60c1	1257	215.5	33.8	9	12.4	30.1	7.1	273.3	55.0	51.5	30.1	191.3	46.3	86.4	129.7
61	61a1c	1278.8	224.5	33.0	13	13.5	6.1	6.5	346.9	0.0	48.0	6.1	333.0	8.8	44.1	22.4
62	62a1	1296	228.0	34.7	12	12.1	13.8	6.0	2.3	-16.7	63.5	13.8	17.5	-28.7	77.2	37.7
63	63a1	1317	228.0	34.7	10	13.9	6.4	7.6	314.0	12.0	51.6	6.4	276.3	21.0	70.4	78.8
64	64a1	1336.5	180.0	34.7	8	14.5	6.7	8.9	15.1	2.0	46.7	6.7	47.2	-4.5	66.3	53.0
65	65c1	1357.5	228.0	33.7	9	13.3	24.9	7.7	73.6	-25.7	98.4	24.9	121.6	-54.8	143.6	110.5
65	65a1b	1357.5	228.0	33.7	8	7.5	10.8	4.6	347.7	15.4	32.9	10.8	259.6	46.5	63.4	93.2
65	65b1	1357.5	228.0	33.7	10	10.0	13.9	5.5	10.9	29.0	19.8	13.9	301.9	9.3	61.3	53.0
65	65d1	1357.5	228.0	33.7	6	8.8	26.6	6.2	354.4	-11.7	58.6	26.6	18.8	-46.9	95.1	51.6
66	66a1	1377.8	228.0	33.7	9	7.0	28.6	4.0	10.1	12.7	35.2	28.6	252.8	-19.2	115.2	100.9
67	67a1	1405.5	228.0	26.0	9	5.3	2.8	3.1	354.6	7.9	39.0	2.8	5.2	47.0	3.9	49.8
68	68a1	1435.5	228.0	26.0	9	7.4	5.4	4.3	24.9	34.3	22.8	5.4	102.5	42.4	67.9	105.7
69	69a1	1453.5	228.0	35.0	9	10.6	32.8	6.1	2.7	27.4	19.4	32.8	322.3	32.8	31.4	45.5
70	70b2	1470	214.5	35.0	7	15.7	14.3	10.3	2.8	6.1	40.7	14.3	356.0	18.8	28.0	20.9
70	70a1b	1470	214.5	35.0	9	21.9	15.2	12.6	33.6	11.1	45.8	15.2	54.4	23.2	49.5	64.4
70	70c1	1470	214.5	35.0	8	16.2	18.7	9.9	56.5	10.1	60.3	18.7	98.8	1.7	95.1	105.4
70	70d1	1470	214.5	35.0	13	12.0	6.6	5.8	8.0	2.1	45.2	6.6	18.1	14.2	36.0	29.3
71	71a2	1489.5	214.5	35.0	8	6.5	16.9	4.0	1.8	29.8	17.0	16.9	180.3	32.2	101.1	139.7
72	72a1	1513.5	235.5	25.0	9	10.9	31.0	6.3	7.3	22.0	25.5	31	277.6	47.6	52.9	82.0
73	73a2	1536.8	231.5	33.5	6	21.0	24.0	14.8	3.2	-3.6	50.4	24	2.1	-56.6	103.4	48.8
74	74a1	1559.3	235.5	32.5	10	11.0	39.7	6.0	339.9	15.7	35.0	39.7	64.6	-53.2	114.2	71.5
75	75a1	1583.3	235.5	32.5	5	9.9	6.7	7.7	343.3	16.5	33.0	6.7	345.4	26.6	23.0	27.3
75	75b1	1583.3	235.5	32.5	5	7.8	51.1	6.0	344.2	-11.4	59.7	51.1	5.0	-27.7	74.6	30.4
75	75c1	1583.3	235.5	32.5	7	13.8	18.9	9.0	353.8	27.2	20.0	18.9	265.8	2.0	91.1	86.6
75	75d1	1583.3	235.5	32.5	7	20.5	44.9	13.4	328.4	37.3	24.8	44.9	324.2	30.2	31.8	40.3
76	76a1	1604.3	235.5	32.5	6	24.7	20.3	17.4	337.6	11.6	39.7	20.3	338.0	15.0	36.4	20.5
77	77a1	1624.5	216.0	36.0	8	16.0	23.9	9.8	352.8	10.6	36.5	23.9	290.7	-56.5	118.1	75.0
78	78a1	1641.8	210.6	36.0	7	12.9	11.2	8.4	319.8	11.6	48.4	11.2	10.1	41.7	9.1	44.5
79	79a1	1663.2	210.6	36.0	11	14.9	18.1	7.8	349.5	6.2	41.4	18.1	19.9	-38.5	87.1	46.1

Polarity tendency (- = R, + = N)	Data Quality (per specimen)	Subjective interpretation of orthogonal plot	Polarity interpretation
-35.2	1	path upward; but directions north and up in strat	R
-57.3	1	path upward and south; up in strat going away from N	
-15.8	1	path toward origin, but too shallow for total recent overprint	
-30.1	3	path upward until 250; directions slightly shallow for post-folding N overprint	
-12.8	2	path upward, up in strat going away from N	R
-7.7	3	path toward origin, but too shallow for total recent overprint	?
1.4	2	path toward origin, but too shallow for total recent overprint	R
18.6	2	path aimed to bypass origin; may head south	N
14.5	2	path toward origin, but too shallow for total recent overprint	
-12.4	3	path aimed to bypass origin; may head south	
22.3	3	path aimed to bypass origin; may head south but last measurement near but west of pre-folding N	
-36.9	1	path aimed to bypass origin; heading south but all directions down	R
-47.5	1	path aimed to bypass origin; heading south	R
-2.1	3	path toward origin, but too shallow for total recent overprint	?
18.1	2	path aimed to bypass origin; may head south	N
-28.5	1	path aimed to bypass origin; heading south	
-13.1	1	path aimed to bypass origin; may head south	R
-33.8	1	path aimed to bypass origin; heading south	
-50.3	1	too noisy to call path but dominantly up, so may be r even though all to the north	R
-36.3	1	path aimed to bypass origin; may head south	R
-44.0	2	odd path but high T directions W	R
6.1	3	path toward origin, but too shallow for total recent overprint	?
-6.2	2	path sort of toward origin but higher T steeper, expected N in strat	
-7.0	3	odd path; no high T but not to origin and too shallow for overprint or N	R
-3.0	2	odd path toward origin to 250, then bypass, heading south	
-56.2	1	odd path toward origin to 250, then bypass, heading south	R
-22.9	2	path looks to be bypassing origin, but demag nearly complete	R
1.0	2	path aimed to bypass origin; heading south	R
-84.3	1	path sort of toward origin to 280 but higher T is south although erratic	R
7.6	1	path aimed to bypass origin; may head south but near expected N in strat at 540	N
29.9	1	path sort of toward origin but higher T steeper, near expected N in strat	
-72.3	3	path upward, high T up to SW in strat	
1.8	2	toward origin but shallow to west makes no sense	
4.1	3	path toward origin, but too shallow for total recent overprint or viable N	?
-0.7	3	path toward origin, but too shallow for total recent overprint or viable N	?
-3.0	3	path toward origin; expected in g, too shallow in s	?
-3.0	3	path toward origin; expected in g, too shallow in s	?
-2.2	2	path looks to be bypassing origin,heading south and up in strat	R
-55.3	1	odd west and down direction removed but trend is south and almost up	
-4.1	2	path toward origin; clockwise of expected in g, but too shallow in s	

-68.5	3	odd east and down direction removed but trend is south and up	
23.6	2	path toward origin; slightly clockwise of expected	R
-39.1	1	path looks to be bypassing origin,heading south but not up in strat	R
1.7	3	path toward origin to 280; possibly toward south after that ;possibly overprint before noise.	
-106.6	1	path past origin to 478, then back toward origin from S and Up direction, but end point closer to R r	R
-34.4	3	path toward origin before noise; expected in g, too shallow in s	
1.7	2	path to bypass origin before noise; expected but trending clockwise in g, too shallow in s	
-121.6	1	path past origin to 251, then back sort of toward it before onset of noise	R
1.5	3	path sort of toward origin; slightly too shallow for expected in geog but nonsensically shallow up to	
1.1	3	path kinked at 251-322, but mostly toward origin; near expected in g, too shallow in s	
-30.9	2	path upward from N; too shallow in g; up but still N in s	R
-6.3	2	path slightly upward from N; too shallow in g; up but still N and very shallow in s	R
-44.8	2	path up to SE not origin; looks to be heading to shallow up to the S in strat, steeper and closer to ex	R
-27.8	2	path might bypass origin but most to 420 are expected N in g, too shallow in s, with hint of circle aw	R
-27.6	2	path upward toward south; too shallow in g, up but still N in s	
-81.8	2	path might bypass origin but most to 420 are expected N in g, too shallow in s, with hint of circle aw	R
-56.9	1	path up to SE past origin but looks like R expected in g, not s so could be post-folding remag?	
-52.4	2	odd direction SW and down; demag going up to S but projected end point on GS too shallow in strat	
-12.0	1	S-shaped path away from expected N in g but not obviously toward S and Up in s.	R
NaN	NaN	-	-
NaN	NaN	-	-
-8.2	3	path toward origin before noise onset above 280; a bit shallow in g but way too shallow in s	?
-10.6	1	path past origin but not convincingly R, could be fake normal in strat as GS migration is shallow to st	
-0.6	2	path apparently past origin but like 40a1 could be migrating to normal in strat.	
-18.0	1	path up and to S but gets noisy above 251; still looks like shallow up to S might be destination.	R
45.2	2	path upward to S; but too shallow in s so possibly post-folding reverse overprint?	
-35.4	3	path might bypass origin but there is no clear GS going to south, so could be N post-folding overprin	
-14.0	3	nonsensical Z path, no part toward origin; might be noisy overprint -- too shallow in s for N so possil	?
-24.4	1	path not to origin, appears migrating to south but not up	R
1.3	2	path headed to bypass origin, possibly S; GS toward E but nowhere up	R
-57.5	1	path bypassed origin to S, up at 283 in strat but shallow at higher T	R
-74.4	1	path headed to bypass origin but stalled 279-419, then very noisy; GS toward S not not up	
-50.8	1	path headed up and south; GS ends up	
-18.0	1	path bypassed origin; GS very noisy after demag only overprint to 280	R
-72.3	1	path bypassed origin, GS south but not up in strat	
-16.0	1	path bypassed origin to S, but no up directions	
-46.6	1	path bypassed origin but stalled220-325; GS to south but no up directions	R
-69.6	1	path bypassed origin but stalled 253-419; went up in g but not in strat; GS to south, just not up	R
-43.2	1	path bypassed origin with up in mid range; GS to south but shallow	R
-14.5	1	odd path to east and up from upward NRM; GS in strat to shallower directions.	R
-20.1	1	path aimed up and south; short GS segment all up in strat, heading S but still NE	
-21.3	3	path pretty much toward origin before jump in moment and early end of demag.	
-20.1	3	path from south, headed up. Odd direction suggests orientation error.	R
-39.1	1	path toward south and upward but still steeply down in strat before noise bloomed.	
-15.1	1	path southward might bypass origin; GS away from present field in geog, shallow and down in strat.	
4.8	2	path might bypass origin but no convincing GS. What was measured could all be overprint -- too sha	N

-18.4	2	path bypassed origin; GS headed S but last directions still down to northwest, so possibly original N	N
-0.3	3	path kinked ~421; no good GS; directions shallow down in g, shallow up in s	?
16.7	1	path bypassed origin but GS segment ended steeply down to N	N
-17.0	1	path aimed to bypass origin, kinked at 420 to go up from W; GS segment clearly aimed south and up	
-21.3	1	path kinked about 221, toward origin after that before onset of noise; however, direction odd being	R
-5.2	2	path looks to bypass origin but only gets to steeply down in strat	
31.8	2	path could be going to origin before noise onset but consensus may be N	
4.2	2	path looks to be going to bypass origin but can't say it isn't N	N
-9.2	2	path aimed to bypass origin but useful measurements all moderately down N in geog, nonsensically	R
-45.9	1	path aimed to miss origin heading up but SW; end GS segment steeply up but NW in strat so probab	R
-35.0	1	path bypassed origin; long GS segment got to very shallow W in strat so probably R	R
-51.1	1	path definitely not toward origin but up to SE; got to E and horizontal in strat	
43.4	2	path bypassed origin to S, but all directions down, maybe too steep for N in strat but still very far fro	R
-34.9	1	odd NRM moderately down to SW suggests orientation error; GS segment is toward S but ends mod	
3.9	3	path toward origin but very shallow in strat	?
-13.7	1	first part of path aimed to bypass origin, going up to SSE; GS segment up to N, heading S in strat	R
-18.8	1	ragged path with turn about 321; GS segment to shallow down to W in strat so a long way to go for	R
-19.6	1	path turn and stall 382-540, from removing downNNW to down and NE components. May end shall	R
-45.2	1	similar to 65a1b	
-30.5	1	path to 420 removes down NE component, erratic above that but possibly end of GS in strat is steep	R
-41.5	1	erratic path bypasses origin; GS segment ends down SW in strat, showing tendency toward R	
-36.5	1	screwy curved path to 383 then wild but heads upward; GS upper hemisphere toward	
-80.0	1	path stalls 321-479, sort of continues to SW and up in geog; GS segment might end SW end up in ge	R
35.1	1	path turns about 382-420, toward origin after that, last segment mid down and N in strat	N
-45.1	1	path bypasses origin going up to south but stalls with increasing noise after 479; GS segment progre	R
-12.0	2	path toward origin to onset of noise at 421; cluster of noisy directions to 600 is moderately down to	N
12.7	3	path aimed to bypass origin but noisy going nowhere 325-559 with clustered directions NNE and ste	
-3.7	2	path very noisy, might turn about 379; possible GS segment toward S but down to ENE so nonsense	N
-34.8	2	path may turn 280; with directions going from NE and shallow down to shallow up in geog or E and s	
9.2	2	path static 322-540, maybe with slight bend there; short GS segment trends SE but directions all mo	
-84.1	1	path to south but noisy above 382; definitely south but down in strat so better fit for post-folding ov	R
-27.4	1	path aimed W and upward in geog, Very noisy at high T but directions mostly down	R
-53.0	1	path turns from removal of W and down to N and down components at about 281; directions get sh	R
-79.2	1	path from removal of W and down component goes shallow up to NE in geog, steeper up to NE in st	R
10.0	3	path kink about 220 from removal of a NW and down to a NNE and shallower component; higher T r	
-14.9	3	path from removal of W and down component, End of life at 258.	?
-71.1	3	path noisy to 379, impossible beyond that.	
-7.0	2	path in geog from removal of steeply down component, very noisy but possibly up S directions in str	
3.3	3	path might be toward origin after kink cluster 181-281; most directions at higher T down	?
-81.6	1	path noisy but seems to be going up; No GS but all high T directions are up, some even south in Stra	R
39.3	2	path passed origin, then again. GS segment to 470 to SSW and shallow in geog, moderately down in	R
-45.7	1	path somewhat erratic but to south and up in geog; GS to SE and shallow up, passing through R in st	R

4.10.3 Detrital zircon fission track analyses

TABLE A3. Coupled detrital zircon fission-track & U-Pb analyses

Sample ID	Spot ID	Spot Index	Unique Grain #	FT age (Ma)	Symmetric ±1s (Ma)	95% CI (-)	95% CI (+)	U-Pb age (Ma)	±2s (Ma)	Ns	Area (um^2)	U/Cation	±1s	[U] (ppm)	[Th] (ppm)	[Sm] (ppm)	Zeta	±1s	Rho	±1s
Middle Siwalik																				
5b	P1408_002_Zrn_A_1_RAD_0	1	1	**23.90**	**7.63**	11.26	21.27	0.00	0.00	14	5.3120E+02	0.0012	0.0002	95	157	2	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_1	2	2	**43.87**	**15.84**	22.52	46.11	87.06	5.60	10	5.3087E+02	0.0005	0.0001	36	48	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_2	3	3	**83.88**	**24.16**	36.60	64.60	543.95	20.01	19	5.2917E+02	0.0005	0.0001	31	33	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_3	4	4	**13.63**	**4.60**	6.69	13.11	78.79	3.75	12	5.3075E+02	0.0018	0.0003	120	66	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_4	5	5	**11.83**	**6.26**	7.73	22.23	95.84	6.03	4	5.2949E+02	0.0007	0.0001	64	51	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_5	6	6	**26.10**	**9.82**	13.79	29.16	90.09	4.41	9	5.2929E+02	0.0007	0.0001	63	90	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_7	8	7	**26.97**	**5.96**	9.62	14.93	48.51	2.61	55	5.3248E+02	0.0042	0.0007	391	472	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_8	9	8	**28.58**	**6.09**	9.90	15.13	43.77	3.94	69	5.2980E+02	0.0050	0.0009	241	307	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_9	10	9	**19.71**	**11.89**	13.81	45.91	0.00	0.00	3	5.3055E+02	0.0003	0.0001	27	30	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_10	11	10	**567.99**	**120.15**	190.34	280.16	1064.94	47.51	70	5.3040E+02	0.0002	0.0000	21	48	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_11	12	11	**19.91**	**6.36**	9.39	17.76	69.33	4.15	14	5.3047E+02	0.0015	0.0003	115	104	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_12	13	12	**21.15**	**6.44**	9.64	17.69	946.69	25.61	16	5.2977E+02	0.0016	0.0003	135	140	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_13	14	13	**65.70**	**20.04**	29.93	54.73	82.05	7.18	16	5.3057E+02	0.0005	0.0001	41	39	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_14	15	14	**27.37**	**10.29**	14.45	30.55	90.15	6.87	9	5.3022E+02	0.0007	0.0001	52	48	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_15	16	15	**28.69**	**10.36**	14.74	30.26	179.75	8.84	10	5.3021E+02	0.0007	0.0001	54	35	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_16	17	16	**15.55**	**6.13**	8.47	18.60	89.81	5.67	8	5.3057E+02	0.0011	0.0002	95	88	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_17	18	17	**14.11**	**8.51**	9.88	32.90	55.70	4.89	3	5.3164E+02	0.0004	0.0001	30	37	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_18	19	18	**18.92**	**4.91**	7.65	12.83	101.66	3.71	27	5.3257E+02	0.0030	0.0005	191	160	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_19	20	19	**27.61**	**10.39**	14.59	30.87	91.86	6.66	9	5.3106E+02	0.0007	0.0001	35	70	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_20	21	20	**20.00**	**6.10**	9.12	16.74	491.25	14.15	16	5.3280E+02	0.0017	0.0003	64	55	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_21	22	21	**10.30**	**6.21**	7.22	24.05	86.85	8.64	3	5.3215E+02	0.0006	0.0001	34	64	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_22	23	22	**9.18**	**4.86**	6.00	17.26	91.85	6.18	4	5.3171E+02	0.0009	0.0002	70	145	2	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_23	24	23	**21.11**	**5.66**	8.76	14.95	85.81	2.82	24	5.3209E+02	0.0024	0.0004	190	10	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_24	25	24	**22.60**	**6.90**	10.32	18.96	92.28	5.29	16	5.2975E+02	0.0015	0.0003	122	137	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_25	26	25	**6.67**	**6.77**	5.80	43.99	100.54	8.77	1	5.3050E+02	0.0003	0.0001	26	26	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_26	27	26	**30.20**	**7.84**	12.22	20.48	89.55	5.73	27	5.3049E+02	0.0019	0.0003	123	135	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_28	29	27	**35.83**	**10.16**	15.48	27.20	91.06	4.61	20	5.3243E+02	0.0012	0.0002	108	188	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_29	30	28	**18.43**	**4.42**	7.02	11.33	1161.84	29.19	37	5.3050E+02	0.0042	0.0007	247	347	2	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_30	31	29	**20.80**	**7.83**	10.99	23.26	1148.34	27.84	9	5.3040E+02	0.0009	0.0002	56	93	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_31	32	30	**18.05**	**10.89**	12.64	42.07	98.96	7.86	3	5.3254E+02	0.0003	0.0001	33	48	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_32	33	31	**57.35**	**15.42**	23.80	40.54	55.21	3.86	24	5.3036E+02	0.0009	0.0002	46	64	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_33	34	32	**5.52**	**5.60**	4.79	36.39	95.08	7.28	1	5.3098E+02	0.0004	0.0001	38	56	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_34	35	33	**19.25**	**5.17**	7.99	13.65	48.08	2.85	24	5.3067E+02	0.0026	0.0005	124	78	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_35	36	34	**12.44**	**3.81**	5.69	10.49	49.81	6.73	16	5.3178E+02	0.0027	0.0005	265	92	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_36	37	35	**44.08**	**21.17**	27.17	70.46	133.11	5.90	5	5.3045E+02	0.0002	0.0000	27	21	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_37	38	36	**54.65**	**11.89**	19.23	29.61	498.09	14.62	60	5.3063E+02	0.0023	0.0004	112	121	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_38	39	37	**12.84**	**2.94**	4.72	7.45	805.33	25.03	46	5.3048E+02	0.0075	0.0013	345	122	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_39	40	38	**22.71**	**5.91**	9.21	15.46	770.33	24.67	27	5.2975E+02	0.0025	0.0004	144	6	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_40	41	39	**3.52**	**3.57**	3.05	23.21	94.03	6.83	1	5.2969E+02	0.0006	0.0001	51	106	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_41	42	40	**20.43**	**10.82**	13.34	38.31	93.32	6.56	4	5.3071E+02	0.0004	0.0001	39	51	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_42	43	41	**19.30**	**6.72**	9.68	19.38	87.72	4.02	11	5.3045E+02	0.0012	0.0002	89	97	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_43	44	42	**21.99**	**8.68**	11.99	26.32	735.61	33.95	8	5.3052E+02	0.0008	0.0001	33	76	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_44	45	43	**21.27**	**5.25**	8.28	13.53	1067.34	28.62	33	5.3165E+02	0.0032	0.0006	175	30	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_45	46	44	**3.30**	**3.35**	2.87	21.79	1542.60	40.43	1	5.3040E+02	0.0006	0.0001	44	73	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_46	47	45	**19.74**	**5.51**	8.44	14.74	1170.32	25.51	21	5.3027E+02	0.0022	0.0004	229	355	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_47	48	46	**25.19**	**6.04**	9.58	15.45	1149.88	31.45	37	5.3042E+02	0.0031	0.0005	281	16	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_48	49	47	**20.80**	**6.82**	9.99	19.20	2052.33	38.02	13	5.3094E+02	0.0013	0.0002	128	39	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_49	50	48	**24.00**	**11.52**	14.80	38.49	88.04	7.22	5	5.3044E+02	0.0004	0.0001	38	53	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_50	51	49	**46.97**	**22.59**	28.98	75.21	84.54	12.47	5	5.3057E+02	0.0002	0.0000	22	21	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_51	52	50	**15.63**	**4.58**	6.92	12.42	2792.86	31.45	18	5.3048E+02	0.0024	0.0004	211	499	3	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_52	53	51	**40.14**	**9.88**	15.58	25.40	971.45	23.53	33	5.3173E+02	0.0017	0.0003	140	98	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_53	54	52	**20.16**	**6.79**	9.88	19.34	93.17	3.48	12	5.3050E+02	0.0012	0.0002	107	131	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_54	55	53	**98.06**	**20.64**	33.53	50.75	133.64	5.29	73	5.3008E+02	0.0015	0.0003	135	113	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_55	56	54	**10.14**	**4.22**	5.73	13.15	91.79	4.45	7	5.3090E+02	0.0014	0.0002	91	142	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_56	57	55	**34.90**	**14.54**	19.71	45.11	59.77	4.86	7	5.3057E+02	0.0004	0.0001	28	27	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_57	58	56	**529.60**	**117.74**	185.13	278.57	1187.35	37.77	53	5.3235E+02	0.0002	0.0000	17	104	6	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_58	59	57	**26.75**	**7.71**	11.71	20.78	154.93	7.49	19	5.2931E+02	0.0015	0.0003	97	96	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_59	60	58	**46.42**	**18.33**	25.31	55.41	92.60	10.99	8	5.3046E+02	0.0004	0.0001	22	17	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_60	61	59	**27.28**	**7.86**	11.93	21.18	58.85	5.12	19	5.3032E+02	0.0014	0.0003	119	241	3	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_62	63	60	**28.96**	**7.54**	11.74	19.71	35.92	1.66	27	5.3063E+02	0.0019	0.0003	171	62	0	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_63	64	61	**26.84**	**10.10**	14.18	29.99	70.48	3.08	9	5.2898E+02	0.0007	0.0001	53	83	2	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_64	65	62	**22.42**	**5.72**	8.95	14.88	50.52	3.43	29	5.2933E+02	0.0027	0.0005	133	203	1	1105018	16414.47	52.617	1.4837

5b	P1408_002_Zrn_A_1_RAD_65	66	63	**46.88**	**12.34**	19.15	32.30	54.88	5.66	26	5.3091E+02	0.0012	0.0002	72	116	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_66	67	64	**33.44**	**9.80**	14.81	26.54	53.09	3.52	18	5.2886E+02	0.0011	0.0002	78	178	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_67	68	65	**16.83**	**5.02**	7.56	13.70	1148.38	25.74	17	5.2952E+02	0.0021	0.0004	145	268	2	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_68	69	66	**24.07**	**6.03**	9.47	15.60	51.68	2.14	31	5.3039E+02	0.0027	0.0005	193	248	1	1105018	16414.47	52.617	1.4837
5b	P1408_002_Zrn_A_1_RAD_69	70	67	**44.31**	**15.44**	22.20	44.35	101.88	6.42	11	5.3051E+02	0.0005	0.0001	39	64	0	1105018	16414.47	52.617	1.4837
25c	P1408_004_Zrn_A_1_RAD_0	1	1	**26.11**	**6.85**	10.65	17.96	505.47	15.71	26	5.3063E+02	0.0021	0.0004	239	297	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_1	2	2	**12.60**	**4.13**	6.06	11.67	51.80	3.14	13	5.3183E+02	0.0021	0.0004	170	214	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_2	3	3	**43.53**	**15.16**	21.80	43.53	56.29	3.37	11	5.3083E+02	0.0005	0.0001	57	129	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_3	4	4	**17.20**	**4.31**	6.77	11.16	833.10	26.64	31	5.2908E+02	0.0038	0.0007	403	431	2	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_5	6	5	**46.89**	**14.29**	21.36	39.11	1055.12	26.56	16	5.2964E+02	0.0007	0.0001	75	15	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_6	7	6	**53.17**	**14.10**	21.83	36.93	54.18	6.61	25	5.3142E+02	0.0010	0.0002	111	178	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_7	8	7	**26.98**	**6.87**	10.75	17.84	494.16	12.99	29	5.3203E+02	0.0022	0.0004	285	218	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_8	9	8	**12.94**	**2.93**	4.71	7.40	38.73	2.03	48	5.3042E+02	0.0077	0.0013	683	224	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_9	10	9	**14.15**	**4.23**	6.36	11.54	500.47	17.74	17	5.3059E+02	0.0025	0.0004	339	240	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_10	11	10	**12.98**	**4.88**	6.86	14.53	96.36	4.21	9	5.2985E+02	0.0014	0.0003	195	404	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_12	13	11	**27.53**	**6.04**	9.77	15.12	515.21	20.93	56	5.3047E+02	0.0042	0.0007	606	469	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_13	14	12	**15.58**	**6.92**	9.16	22.20	519.67	12.97	6	5.3051E+02	0.0008	0.0001	118	103	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_14	15	13	**15.64**	**4.71**	7.07	12.89	511.62	18.95	17	5.3062E+02	0.0023	0.0004	351	326	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_16	17	14	**7.83**	**2.34**	3.52	6.39	418.27	10.97	17	5.3044E+02	0.0045	0.0008	670	74	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_17	18	15	**17.57**	**4.06**	6.50	10.31	37.51	1.36	43	5.3033E+02	0.0051	0.0009	772	681	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_18	19	16	**20.29**	**4.93**	7.80	12.66	528.06	21.27	35	5.3223E+02	0.0036	0.0006	512	319	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_19	20	17	**15.44**	**3.39**	5.48	8.49	42.80	2.33	56	5.3061E+02	0.0075	0.0013	954	59	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_20	21	18	**10.00**	**2.53**	3.97	6.57	485.04	20.49	30	5.3036E+02	0.0062	0.0011	1029	729	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_21	22	19	**16.07**	**3.59**	5.79	9.05	41.24	3.03	51	5.2926E+02	0.0066	0.0012	956	626	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_22	23	20	**15.29**	**4.88**	7.21	13.63	41.25	2.21	14	5.3128E+02	0.0019	0.0003	315	264	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_23	24	21	**15.73**	**8.33**	10.27	29.52	97.80	6.34	4	5.3067E+02	0.0005	0.0001	77	72	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_24	25	22	**5.11**	**2.27**	3.01	7.31	40.75	3.15	6	5.3036E+02	0.0024	0.0004	372	271	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_25	26	23	**37.75**	**8.47**	13.63	21.30	501.82	15.51	50	5.3063E+02	0.0028	0.0005	311	209	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_26	27	24	**27.51**	**9.32**	13.52	26.55	833.01	24.38	12	5.2997E+02	0.0009	0.0002	106	100	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_27	28	25	**10.32**	**3.29**	4.87	9.20	39.53	2.20	14	5.3063E+02	0.0028	0.0005	317	61	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_28	29	26	**12.42**	**4.68**	6.57	13.92	492.24	16.70	9	5.3050E+02	0.0015	0.0003	149	66	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_29	30	27	**25.82**	**6.01**	9.60	15.26	339.89	10.83	42	5.3051E+02	0.0034	0.0006	378	23	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_30	31	28	**3.91**	**1.36**	1.96	3.94	547.49	22.43	11	5.3101E+02	0.0058	0.0010	639	32	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_31	32	29	**15.57**	**5.86**	8.23	17.44	537.33	20.58	9	5.3067E+02	0.0012	0.0002	134	345	2	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_34	35	30	**16.87**	**7.49**	9.92	24.04	80.69	4.18	6	5.3000E+02	0.0007	0.0001	81	101	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_35	36	31	**15.12**	**3.60**	5.73	9.22	511.22	19.24	38	5.2896E+02	0.0052	0.0009	573	77	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_36	37	32	**12.35**	**4.17**	6.06	11.87	814.38	22.74	12	5.3033E+02	0.0020	0.0004	222	272	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_37	38	33	**23.71**	**5.59**	8.90	14.24	694.36	31.87	40	5.3043E+02	0.0035	0.0006	344	174	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_38	39	34	**9.33**	**2.38**	3.73	6.20	38.37	2.89	29	5.3133E+02	0.0065	0.0011	563	265	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_39	40	35	**20.57**	**5.00**	7.91	12.84	1081.26	31.42	35	5.3057E+02	0.0035	0.0006	346	315	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_40	41	36	**12.91**	**3.94**	5.90	10.85	516.92	37.68	16	5.3066E+02	0.0026	0.0005	228	93	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_41	42	37	**30.25**	**8.23**	12.67	21.77	515.06	23.51	23	5.2996E+02	0.0016	0.0003	169	241	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_42	43	38	**16.56**	**3.67**	5.93	9.24	0.00	0.00	54	5.3036E+02	0.0068	0.0012	768	776	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_43	44	39	**19.52**	**10.35**	12.75	36.67	1158.86	50.34	4	5.3028E+02	0.0004	0.0001	37	75	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_44	45	40	**15.40**	**3.50**	5.62	8.85	477.84	16.31	47	5.3044E+02	0.0063	0.0011	647	1072	2	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_45	46	41	**15.16**	**4.30**	6.56	11.55	483.72	17.44	20	5.3056E+02	0.0027	0.0005	290	410	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_46	47	42	**37.92**	**9.76**	15.23	25.41	1045.19	31.07	28	5.3069E+02	0.0015	0.0003	148	180	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_47	48	43	**10.09**	**4.85**	6.23	16.24	1051.97	39.81	5	4.1485E+02	0.0013	0.0002	92	312	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_48	49	44	**73.45**	**21.55**	32.51	58.05	1170.27	39.45	18	5.3066E+02	0.0005	0.0001	47	142	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_49	50	45	**19.33**	**6.17**	9.11	17.23	49.52	2.46	14	5.3078E+02	0.0015	0.0003	155	194	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_50	51	46	**31.57**	**11.41**	16.23	33.30	93.19	6.26	10	5.2895E+02	0.0007	0.0001	65	80	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_51	52	47	**19.84**	**5.33**	8.24	14.09	796.28	45.32	24	5.3111E+02	0.0025	0.0004	196	388	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_52	53	48	**66.91**	**14.46**	23.41	35.90	510.60	26.24	63	5.3040E+02	0.0020	0.0003	107	135	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_53	54	49	**7.49**	**5.45**	5.75	24.60	518.69	22.16	2	5.3176E+02	0.0006	0.0001	51	146	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_54	55	50	**13.63**	**8.22**	9.55	31.81	49.77	3.84	3	5.3096E+02	0.0005	0.0001	40	82	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_55	56	51	**15.79**	**3.87**	6.11	9.97	40.06	2.57	34	5.3064E+02	0.0045	0.0008	422	323	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_56	57	52	**19.49**	**7.69**	10.63	23.34	58.22	6.57	8	5.3070E+02	0.0009	0.0001	77	142	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_57	58	53	**10.38**	**2.42**	3.86	6.15	484.57	17.64	42	5.3033E+02	0.0084	0.0015	746	595	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_58	59	54	**45.97**	**20.41**	27.02	65.20	548.91	26.75	6	5.3052E+02	0.0003	0.0000	26	28	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_59	60	55	**15.53**	**3.92**	6.15	10.18	828.10	24.92	30	5.3112E+02	0.0040	0.0007	358	164	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_60	61	56	**13.72**	**6.10**	8.07	19.59	1338.70	35.98	6	5.3042E+02	0.0009	0.0002	81	86	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_61	62	57	**13.27**	**9.67**	10.18	43.57	93.87	10.65	2	5.3036E+02	0.0003	0.0001	29	49	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_62	63	58	**16.78**	**4.07**	6.44	10.45	758.44	23.36	35	5.3061E+02	0.0043	0.0008	372	373	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_63	64	59	**5.80**	**4.22**	4.45	19.06	507.61	18.39	2	5.3083E+02	0.0007	0.0001	62	74	0	1105018	16414.47	92.467	2.5467

25c	P1408_004_Zrn_A_1_RAD_64	65	60	**102.67**	**31.39**	46.76	85.31	1435.45	44.25	16	3.8249E+02	0.0004	0.0001	37	100	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_65	66	61	**28.44**	**9.93**	14.27	28.59	508.90	26.78	11	5.3046E+02	0.0008	0.0001	77	167	1	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_66	67	62	**9.99**	**3.19**	4.71	8.91	41.23	2.59	14	5.2999E+02	0.0029	0.0005	244	305	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_67	68	63	**15.28**	**7.34**	9.43	24.58	1045.69	41.60	5	5.3044E+02	0.0007	0.0001	58	144	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_68	69	64	**21.53**	**5.93**	9.12	15.79	525.41	18.49	22	5.3041E+02	0.0021	0.0004	197	196	0	1105018	16414.47	92.467	2.5467
25c	P1408_004_Zrn_A_1_RAD_69	70	65	**11.48**	**3.89**	5.65	11.10	504.58	22.51	12	4.0133E+02	0.0029	0.0005	295	335	0	1105018	16414.47	92.467	2.5467
50b	P1408_003_Zrn_A_1_RAD_0	1	1	**11.32**	**11.49**	9.83	74.41	58.16	6.60	1	5.2872E+02	0.0002	0.0000	15	14	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_1	2	2	**520.18**	**104.00**	166.85	241.12	1447.11	42.81	105	5.3033E+02	0.0004	0.0001	35	39	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_2	3	3	**46.40**	**15.65**	22.72	44.37	59.99	5.05	12	5.3013E+02	0.0005	0.0001	44	46	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_3	4	4	**47.78**	**13.15**	20.19	34.86	53.42	2.28	22	5.3026E+02	0.0010	0.0002	74	116	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_4	5	5	**18.21**	**5.09**	7.79	13.59	1143.90	28.60	21	5.3056E+02	0.0024	0.0004	250	490	2	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_5	6	6	**25.29**	**9.51**	13.36	28.25	944.48	23.41	9	5.3043E+02	0.0007	0.0001	73	149	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_6	7	7	**17.30**	**6.51**	9.14	19.38	592.57	17.92	9	5.3051E+02	0.0011	0.0002	105	95	2	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_7	8	8	**8.73**	**2.44**	3.73	6.52	504.36	11.38	21	5.2971E+02	0.0050	0.0009	455	299	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_8	9	9	**11.88**	**3.70**	5.50	10.25	35.80	1.52	15	5.3092E+02	0.0026	0.0005	210	190	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_9	10	10	**27.61**	**28.03**	23.98	179.83	912.01	55.24	1	5.2899E+02	0.0001	0.0000	9	22	2	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_10	11	11	**27.20**	**13.06**	16.77	43.61	1106.89	35.86	5	5.3045E+02	0.0004	0.0001	43	151	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_11	12	12	**28.38**	**11.82**	16.03	36.72	96.70	7.05	7	5.3158E+02	0.0005	0.0001	46	87	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_12	13	13	**24.81**	**25.19**	21.55	161.88	1191.17	63.36	1	5.3138E+02	0.0001	0.0000	7	27	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_13	14	14	**10.65**	**3.25**	4.86	8.94	814.24	25.56	16	5.3162E+02	0.0031	0.0005	247	106	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_14	15	15	**12.80**	**5.68**	7.53	18.26	1156.76	35.85	6	5.3095E+02	0.0010	0.0002	121	168	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_15	16	16	**9.02**	**2.09**	3.34	5.31	36.42	1.06	43	5.3063E+02	0.0099	0.0017	1122	11	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_16	17	17	**16.40**	**4.45**	6.87	11.81	1257.33	25.03	23	5.2991E+02	0.0029	0.0005	226	95	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_17	18	18	**7.73**	**2.41**	3.59	6.68	394.81	17.66	15	5.3227E+02	0.0040	0.0007	302	280	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_18	19	19	**15.71**	**7.54**	9.69	25.24	537.19	17.29	5	5.3194E+02	0.0007	0.0001	58	347	2	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_19	20	20	**9.07**	**2.17**	3.45	5.57	369.88	14.29	37	5.3069E+02	0.0085	0.0015	953	32	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_20	21	21	**14.00**	**4.46**	6.60	12.47	47.74	2.56	14	3.7928E+02	0.0029	0.0005	327	356	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_21	22	22	**35.99**	**19.05**	23.49	67.23	57.35	6.26	4	5.3069E+02	0.0002	0.0000	28	86	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_22	23	23	**0.00**	**0.00**	0.00	16.88	0.00	0.00	0	5.3249E+02	0.0004	0.0001	29	37	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_23	24	24	**6.81**	**2.37**	3.42	6.85	1080.14	22.17	11	5.3064E+02	0.0034	0.0006	308	491	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_24	25	25	**57.40**	**18.32**	27.02	50.85	1764.33	35.73	14	5.3035E+02	0.0005	0.0001	64	112	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_25	26	26	**9.91**	**3.45**	4.97	9.97	508.83	15.45	11	5.3037E+02	0.0023	0.0004	295	209	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_26	27	27	**25.60**	**6.25**	9.88	16.08	66.90	3.92	34	5.3046E+02	0.0028	0.0005	211	102	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_27	28	28	**72.39**	**30.18**	40.84	93.04	989.10	35.77	7	5.3060E+02	0.0002	0.0000	22	56	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_28	29	29	**6.28**	**1.56**	2.46	4.04	508.01	12.40	32	5.3260E+02	0.0106	0.0018	1291	599	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_29	30	30	**12.94**	**9.42**	9.92	42.41	76.99	6.49	2	5.3050E+02	0.0003	0.0001	39	27	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_30	31	31	**26.19**	**6.29**	9.97	16.08	569.80	14.53	37	5.3005E+02	0.0029	0.0005	377	131	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_31	32	32	**9.47**	**2.73**	4.15	7.37	800.06	17.51	19	5.2955E+02	0.0042	0.0007	543	570	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_32	33	33	**17.24**	**5.81**	8.45	16.55	1119.91	23.39	12	5.3329E+02	0.0014	0.0002	201	342	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_33	34	34	**0.00**	**0.00**	0.00	88.38	857.78	50.82	0	5.3074E+02	0.0001	0.0000	9	25	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_34	35	35	**6.42**	**2.53**	3.50	7.70	1166.60	79.61	8	3.5713E+02	0.0039	0.0007	400	599	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_35	36	36	**24.46**	**7.46**	11.16	20.48	1214.22	30.76	16	4.9161E+02	0.0015	0.0003	149	195	2	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_36	37	37	**7.32**	**2.75**	3.87	8.20	500.66	16.81	9	5.3056E+02	0.0026	0.0004	337	548	2	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_37	38	38	**56.32**	**11.50**	18.83	28.21	58.74	3.75	88	5.2952E+02	0.0032	0.0006	415	329	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_38	39	39	**6.74**	**2.99**	3.97	9.63	1248.58	28.77	6	5.3060E+02	0.0019	0.0003	251	39	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_39	40	40	**236.66**	**105.21**	138.33	324.65	548.98	40.51	6	5.3180E+02	0.0001	0.0000	7	5	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_40	41	41	**24.84**	**7.05**	10.74	18.90	89.57	4.22	20	5.3053E+02	0.0017	0.0003	189	134	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_41	42	42	**3.04**	**1.83**	2.13	7.11	797.17	28.02	3	3.9111E+02	0.0028	0.0005	386	240	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_42	43	43	**11.40**	**4.51**	6.23	13.71	43.40	2.80	8	5.3093E+02	0.0015	0.0003	364	200	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_43	44	44	**11.64**	**3.71**	5.49	10.37	1558.59	32.48	14	4.3033E+02	0.0031	0.0005	400	318	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_44	45	45	**10.56**	**5.07**	6.52	16.99	180.48	7.28	5	3.8778E+02	0.0013	0.0002	136	127	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_45	46	46	**20.54**	**5.34**	8.32	13.98	60.62	2.20	27	5.3072E+02	0.0027	0.0005	185	103	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_46	47	47	**9.74**	**7.09**	7.47	31.98	53.17	3.95	2	5.3018E+02	0.0004	0.0001	52	51	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_47	48	48	**13.01**	**4.53**	6.52	13.07	474.89	15.54	11	5.3049E+02	0.0018	0.0003	289	302	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_48	49	49	**11.16**	**2.44**	3.94	6.10	835.92	21.75	58	5.2942E+02	0.0108	0.0019	1688	3909	3	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_49	50	50	**15.99**	**5.57**	8.02	16.05	1017.32	28.87	11	5.3165E+02	0.0014	0.0002	230	326	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_50	51	51	**4.82**	**1.68**	2.42	4.85	518.54	15.40	11	5.3044E+02	0.0048	0.0008	647	1176	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_51	52	52	**12.66**	**5.62**	7.45	18.06	816.80	28.65	6	5.2984E+02	0.0010	0.0002	152	173	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_52	53	53	**14.68**	**5.31**	7.56	15.55	820.05	30.03	10	5.3048E+02	0.0014	0.0002	202	179	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_53	54	54	**16.81**	**4.36**	6.81	11.42	43.15	2.11	27	5.3050E+02	0.0033	0.0006	592	103	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_54	55	55	**12.04**	**5.35**	7.08	17.19	1106.96	41.43	6	5.3055E+02	0.0010	0.0002	131	189	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_55	56	56	**81.96**	**43.42**	53.43	151.70	0.00	0.00	4	5.3085E+02	0.0001	0.0000	18	23	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_56	57	57	**11.60**	**3.92**	5.69	11.16	697.78	22.00	12	5.3010E+02	0.0022	0.0004	362	425	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_57	58	58	**12.65**	**12.85**	10.99	83.12	122.87	11.48	1	5.3007E+02	0.0002	0.0000	26	27	0	1105018	16414.47	77.147	2.4463

50b	P1408_003_Zrn_A_1_RAD_58	59	59	**17.34**	**12.63**	13.30	56.75	123.99	9.74	2	5.3047E+02	0.0002	0.0000	44	30	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_59	60	60	**20.43**	**7.38**	10.50	21.57	33.49	2.28	10	5.3194E+02	0.0010	0.0002	146	73	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_60	61	61	**10.95**	**2.62**	4.17	6.72	33.77	1.17	37	5.3058E+02	0.0070	0.0012	1301	2166	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_61	62	62	**7.15**	**2.49**	3.59	7.20	472.39	22.24	11	5.3056E+02	0.0032	0.0006	490	443	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_62	63	63	**18.01**	**10.87**	12.62	42.02	54.24	2.24	3	5.3059E+02	0.0003	0.0001	59	130	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_64	65	64	**17.76**	**7.40**	10.03	23.02	831.23	27.32	7	4.2174E+02	0.0010	0.0002	140	146	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_65	66	65	**105.77**	**29.97**	45.54	79.49	104.00	16.14	20	5.3091E+02	0.0004	0.0001	77	107	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_66	67	66	**13.20**	**5.21**	7.20	15.81	512.63	17.56	8	5.3057E+02	0.0013	0.0002	248	288	2	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_67	68	67	**14.79**	**10.77**	11.34	48.43	1467.00	41.57	2	5.3180E+02	0.0003	0.0000	53	77	1	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_68	69	68	**37.03**	**12.13**	17.77	34.06	0.00	0.00	13	5.3068E+02	0.0007	0.0001	127	96	0	1105018	16414.47	77.147	2.4463
50b	P1408_003_Zrn_A_1_RAD_69	70	69	**21.45**	**5.90**	9.07	15.70	49.55	2.08	22	3.1807E+02	0.0036	0.0006	711	317	0	1105018	16414.47	77.147	2.4463
75b	P1408_001_Zrn_A_1_RAD_0	1	1	**15.44**	**5.69**	8.05	16.80	801.07	29.89	14	5.3100E+02	0.0036	0.0009	92	110	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_0	1	1	**13.12**	**4.84**	6.84	14.28	786.28	32.60	14	5.3100E+02	0.0043	0.0011	131	188	0	2132117	59574.77	234	7.98
		w. avg.	1	***14.09***	***3.69***															
75b	P1408_001_Zrn_A_1_RAD_1	2	2	**377.23**	**103.37**	156.36	261.69	505.52	40.75	96	5.3100E+02	0.0010	0.0003	18	33	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_2	3	3	**10.26**	**3.34**	4.91	9.42	768.80	31.84	24	5.3000E+02	0.0094	0.0024	196	104	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_3	4	4	**32.14**	**13.49**	18.22	41.94	92.65	8.24	9	5.3100E+02	0.0011	0.0003	28	47	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_3	4	4	**27.27**	**11.86**	15.84	37.69	88.32	19.24	8	5.3100E+02	0.0012	0.0003	35	53	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1b_RAD_3	4	4	**33.44**	**15.23**	19.97	49.40	0.00	0.00	7	5.3100E+02	0.0008	0.0002	41	26	0	2132117	59574.77	234	7.98
		w. avg.	4	***30.00***	***7.69***															
75b	P1408_001_Zrn_A_1_RAD_4	5	5	**8.70**	**2.82**	4.14	7.89	693.79	26.53	25	5.3000E+02	0.0115	0.0029	216	13	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_5	6	6	**13.42**	**5.05**	7.09	15.02	817.26	25.92	13	5.3100E+02	0.0039	0.0010	91	67	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_5	6	6	**21.16**	**7.96**	11.18	23.66	827.60	33.47	13	5.3100E+02	0.0025	0.0006	78	57	0	2132117	59574.77	234	7.98
		w. avg.	6	***15.64***	***4.26***															
75b	P1408_001_Zrn_A_1_RAD_6	7	7	**23.27**	**6.95**	10.44	18.91	1130.97	28.00	41	5.3100E+02	0.0071	0.0018	228	65	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_6	7	7	**18.35**	**5.31**	8.08	14.41	1147.64	39.27	51	5.3100E+02	0.0112	0.0028	435	122	0	2132117	59574.77	234	7.98
		w. avg.	7	***20.16***	***4.22***															
75b	P1408_001_Zrn_A_1_RAD_7	8	8	**51.40**	**22.41**	29.86	70.88	1277.39	54.89	8	5.3100E+02	0.0006	0.0002	19	39	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_7	8	8	**53.84**	**20.77**	28.88	62.00	1270.72	81.11	12	5.3100E+02	0.0009	0.0002	35	84	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1b_RAD_7	8	8	**20.01**	**9.63**	12.35	32.22	1328.01	55.69	6	5.3100E+02	0.0012	0.0003	50	74	0	2132117	59574.77	234	7.98
		w. avg.	8	***29.00***	***8.14***															
75b	P1408_001_Zrn_A_1_RAD_8	9	9	**25.37**	**8.59**	12.46	24.46	809.26	36.13	20	5.3000E+02	0.0032	0.0008	79	31	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_9	10	10	**12.92**	**4.61**	6.59	13.42	507.68	25.19	16	5.3100E+02	0.0050	0.0013	153	99	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_10	11	11	**10.18**	**4.13**	5.66	12.72	496.87	20.47	10	5.3100E+02	0.0039	0.0010	121	85	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_10	11	11	**11.18**	**3.79**	5.50	10.81	480.52	24.82	20	5.3100E+02	0.0072	0.0018	319	446	0	2132117	59574.77	234	7.98
		w. avg.	11	***10.72***	***2.79***															
75b	P1408_001_Zrn_A_1_RAD_12	13	12	**40.37**	**12.78**	18.91	35.47	51.28	4.84	28	5.3000E+02	0.0028	0.0007	91	90	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_13	14	13	**29.89**	**9.29**	13.79	25.56	85.49	5.21	32	5.3000E+02	0.0043	0.0011	132	255	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_15	16	14	**17.23**	**5.50**	8.12	15.34	497.32	38.31	27	5.3100E+02	0.0063	0.0016	162	33	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_15	16	14	**15.69**	**4.95**	7.33	13.74	493.17	24.12	29	5.3100E+02	0.0074	0.0019	174	38	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1b_RAD_15	16	14	**14.07**	**5.03**	7.18	14.65	479.20	42.88	16	5.3100E+02	0.0046	0.0012	161	54	0	2132117	59574.77	234	7.98
		w. avg.	14	***15.57***	***2.97***															
75b	P1408_001_Zrn_A_1_RAD_16	17	15	**31.64**	**10.97**	15.80	31.50	516.03	23.90	18	5.3000E+02	0.0023	0.0006	69	76	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_16	17	15	**19.29**	**7.60**	10.51	23.07	489.38	22.50	11	5.3000E+02	0.0023	0.0006	94	121	0	2132117	59574.77	234	7.98
		w. avg.	15	***23.30***	***6.25***															
75b	P1408_001_Zrn_A_1_RAD_17	18	16	**32.41**	**13.61**	18.38	42.30	1777.40	54.63	9	5.3000E+02	0.0011	0.0003	29	23	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_18	19	17	**9.01**	**3.56**	4.92	10.82	511.51	19.57	11	5.3100E+02	0.0049	0.0012	133	28	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_19	20	18	**18.76**	**6.92**	9.78	20.41	449.60	21.58	14	5.3000E+02	0.0030	0.0008	93	126	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_20	21	19	**57.91**	**18.25**	26.98	50.32	842.40	33.29	29	5.3100E+02	0.0020	0.0005	66	46	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_21	22	20	**27.05**	**13.91**	17.37	48.35	61.85	7.11	5	5.3000E+02	0.0007	0.0002	25	13	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_22	23	21	**133.79**	**44.29**	61.50	112.82	1091.02	47.53	32	5.3000E+02	0.0010	0.0002	37	121	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_22	23	21	**144.89**	**41.51**	65.87	119.65	1094.02	50.97	35	5.3000E+02	0.0010	0.0002	36	112	0	2132117	59574.77	234	7.98
		w. avg.	21	***138.98***	***30.29***															
75b	P1408_001_Zrn_A_1_RAD_23	24	22	**12.49**	**4.67**	6.58	13.87	372.02	18.09	14	5.3000E+02	0.0045	0.0012	159	96	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_24	25	23	**34.52**	**17.76**	22.16	61.58	1104.03	52.86	5	5.3000E+02	0.0006	0.0001	20	17	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_25	26	24	**60.75**	**19.36**	28.59	53.78	86.47	9.98	27	5.2800E+02	0.0018	0.0005	59	95	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_25	26	24	**41.33**	**14.18**	20.48	40.48	90.24	15.11	19	5.2800E+02	0.0019	0.0005	59	98	0	2132117	59574.77	234	7.98
		w. avg.	24	***48.11***	***11.44***															
75b	P1408_001_Zrn_A_1_RAD_27	28	25	**11.23**	**4.31**	6.02	12.97	498.44	22.24	12	5.3000E+02	0.0043	0.0011	190	209	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_29	30	26	**12.09**	**4.55**	6.39	13.56	462.97	28.44	13	5.3000E+02	0.0043	0.0011	93	52	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_30	31	27	**10.52**	**3.42**	5.03	9.65	485.83	14.75	24	5.3000E+02	0.0092	0.0023	240	264	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_30	31	27	**9.07**	**2.85**	4.23	7.94	473.91	20.23	29	5.3000E+02	0.0129	0.0033	380	212	0	2132117	59574.77	234	7.98
		w. avg.	27	***9.66***	***2.19***															
75b	P1408_001_Zrn_A_1a_RAD_31	32	28	**15.43**	**6.72**	8.97	21.37	1809.41	39.19	8	5.3100E+02	0.0021	0.0005	77	9	0	2132117	59574.77	234	7.98

75b	P1408_001_Zrn_A_1_RAD_32	33	29	**52.09**	**17.10**	25.03	48.01	44.47	3.44	23	5.3100E+02	0.0018	0.0004	71	150	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_32	33	29	**78.17**	**25.64**	37.55	71.87	42.82	4.30	23	5.3100E+02	0.0012	0.0003	66	123	0	2132117	59574.77	234	7.98
		w. avg.	29	***60.12***	***14.23***															
75b	P1408_001_Zrn_A_1_RAD_33	34	30	**25.97**	**10.24**	14.15	31.02	59.78	2.69	11	5.3000E+02	0.0017	0.0004	89	61	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_33	34	30	**6.77**	**4.27**	4.85	17.10	56.73	4.67	3	5.3000E+02	0.0018	0.0005	93	67	0	2132117	59574.77	234	7.98
		w. avg.	30	***9.61***	***3.94***															
75b	P1408_001_Zrn_A_1_RAD_34	35	31	**35.32**	**11.61**	16.99	32.64	89.11	5.68	23	5.3000E+02	0.0026	0.0007	95	75	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_34	35	31	**62.77**	**19.22**	28.69	52.62	86.16	5.23	34	5.3000E+02	0.0022	0.0005	87	69	0	2132117	59574.77	234	7.98
		w. avg.	31	***42.66***	***9.94***															
75b	P1408_001_Zrn_A_1_RAD_35	36	32	**11.15**	**4.52**	6.20	13.93	976.45	30.91	10	5.3100E+02	0.0036	0.0009	192	210	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_36	37	33	**15.19**	**5.61**	7.93	16.56	1015.68	103.19	14	5.3000E+02	0.0037	0.0009	118	20	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_37	38	34	**17.61**	**5.70**	8.38	15.96	482.86	22.84	25	5.3000E+02	0.0057	0.0014	209	134	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_39	40	35	**13.33**	**4.26**	6.30	11.91	500.75	21.39	27	5.3000E+02	0.0081	0.0021	295	111	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_41	42	36	**6.27**	**1.95**	2.90	5.40	1497.06	35.03	31	5.3100E+02	0.0199	0.0050	638	632	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_41	42	36	**4.87**	**1.55**	2.30	4.34	1495.41	40.64	27	5.3100E+02	0.0223	0.0056	715	634	0	2132117	59574.77	234	7.98
		w. avg.	36	***5.41***	***1.21***	*1.21*														
75b	P1408_001_Zrn_A_1_RAD_42	43	37	**39.43**	**11.98**	17.93	32.79	1660.10	42.37	36	5.3000E+02	0.0037	0.0009	182	118	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_43	44	38	**2.19**	**2.26**	1.91	15.06	1151.45	41.09	1	5.3100E+02	0.0018	0.0005	87	270	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_43	44	38	**7.28**	**4.59**	5.22	18.40	1137.23	45.11	3	5.3100E+02	0.0017	0.0004	75	80	0	2132117	59574.77	234	7.98
		w. avg.	38	***3.18***	***2.03***															
75b	P1408_001_Zrn_A_1_RAD_44	45	39	**12.34**	**6.35**	7.93	22.14	445.78	33.02	5	5.3100E+02	0.0016	0.0004	62	37	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_44	45	39	**6.36**	**3.27**	4.09	11.43	102.87	6.21	5	5.3100E+02	0.0032	0.0008	183	18	0	2132117	59574.77	234	7.98
		w. avg.	39	***7.61***	***2.91***															
75b	P1408_001_Zrn_A_1_RAD_45	46	40	**36.59**	**10.61**	16.08	28.63	47.46	3.95	51	5.3000E+02	0.0056	0.0014	190	285	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_45	46	40	**31.20**	**8.98**	13.65	24.23	46.83	4.80	54	5.3000E+02	0.0069	0.0018	207	244	0	2132117	59574.77	234	7.98
		w. avg.	40	***33.45***	***6.85***															
75b	P1408_001_Zrn_A_1_RAD_46	47	41	**6.53**	**2.51**	3.50	7.56	25.50	1.63	12	5.3100E+02	0.0074	0.0019	406	412	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_47	48	42	**18.53**	**5.35**	8.12	14.44	774.94	26.40	53	5.3100E+02	0.0115	0.0029	359	321	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_47	48	42	**13.18**	**3.88**	5.87	10.56	769.63	26.79	45	5.3100E+02	0.0137	0.0035	431	315	0	2132117	59574.77	234	7.98
		w. avg.	42	***15.02***	***3.14***															
75b	P1408_001_Zrn_A_1_RAD_48	49	43	**2.58**	**1.94**	2.01	9.01	518.58	20.62	2	5.3000E+02	0.0031	0.0008	144	46	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_49	50	44	**19.18**	**5.92**	8.82	16.30	25.51	1.86	33	5.3100E+02	0.0069	0.0018	291	219	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1_RAD_50	51	45	**16.23**	**4.83**	7.26	13.11	461.24	18.91	43	5.3100E+02	0.0106	0.0027	367	116	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1a_RAD_50	51	45	**4.48**	**3.88**	2.88	8.05	475.00	23.11	5	5.3100E+02	0.0045	0.0011	192	140	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_1b_RAD_50	51	45	**6.02**	**2.53**	3.42	7.89	468.60	20.44	9	5.3100E+02	0.0060	0.0015	319	184	0	2132117	59574.77	234	7.98
		w. avg.	45	***9.46***	***1.94***															
75b	P1408_001_Zrn_A_1_RAD_51	52	46	**9.87**	**5.53**	6.65	20.38	2337.95	122.50	4	5.3000E+02	0.0016	0.0004	78	26	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_2_RAD_0	1	47	**11.59**	**4.37**	6.12	12.98	160.43	9.33	13	5.3100E+02	0.0045	0.0011	245	37	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_2_RAD_1	2	48	**31.95**	**9.57**	14.37	26.07	190.25	9.27	40	5.3000E+02	0.0050	0.0013	244	326	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_2_RAD_2	3	49	**31.67**	**10.17**	14.98	28.36	1127.97	39.68	26	5.3000E+02	0.0033	0.0008	137	151	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_2a_RAD_2	3	49	**28.11**	**9.09**	13.37	25.45	1130.13	48.39	25	5.3000E+02	0.0036	0.0009	148	136	0	2132117	59574.77	234	7.98
		w. avg.	49	***29.69***	***6.78***															
75b	P1408_001_Zrn_A_2_RAD_3	4	50	**21.19**	**7.56**	10.79	21.96	60.14	5.52	16	5.3000E+02	0.0030	0.0008	115	118	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_2_RAD_4	5	51	**20.60**	**6.45**	9.57	17.85	472.02	22.14	30	5.3000E+02	0.0059	0.0015	175	115	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_2a_RAD_4	5	51	**16.50**	**4.79**	7.27	12.98	0.00	0.00	50	5.3000E+02	0.0122	0.0031	496	218	0	2132117	59574.77	234	7.98
		w. avg.	51	***17.96***	***3.85***															
75b	P1408_001_Zrn_A_2_RAD_5	6	52	**13.84**	**4.14**	6.23	11.31	807.22	19.64	40	5.3100E+02	0.0116	0.0029	555	690	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_2_RAD_6	7	53	**10.12**	**4.41**	5.88	14.03	494.89	30.99	8	5.3100E+02	0.0032	0.0008	179	151	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_2a_RAD_6	7	53	**8.96**	**3.30**	4.68	9.76	466.45	17.78	14	5.3100E+02	0.0063	0.0016	311	256	0	2132117	59574.77	234	7.98
		w. avg.	53	***9.38***	***2.64***															
75b	P1408_001_Zrn_A_2_RAD_7	8	54	**26.72**	**8.79**	12.86	24.75	1481.91	42.64	23	5.3000E+02	0.0035	0.0009	131	31	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_2_RAD_8	9	55	**57.94**	**20.70**	29.47	59.70	47.78	6.51	16	5.3100E+02	0.0011	0.0003	49	78	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_2_RAD_9	10	56	**14.82**	**4.87**	7.13	13.74	458.86	18.67	23	5.3000E+02	0.0062	0.0016	206	278	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_2_RAD_10	11	57	**51.62**	**15.52**	23.27	42.23	45.60	3.87	39	5.3100E+02	0.0030	0.0008	142	277	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_2_RAD_11	12	58	**9.29**	**3.57**	4.98	10.74	776.55	28.84	12	5.3100E+02	0.0052	0.0013	257	305	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_2a_RAD_11	12	58	**15.74**	**6.05**	8.44	18.19	792.87	26.66	12	5.3100E+02	0.0031	0.0008	175	90	0	2132117	59574.77	234	7.98
		w. avg.	58	***10.96***	***3.07***															
75b	P1408_001_Zrn_A_2_RAD_12	13	59	**40.59**	**17.03**	23.01	52.92	83.24	8.29	9	5.3000E+02	0.0009	0.0002	43	73	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_3_RAD_0	1	60	**7.62**	**2.89**	4.05	8.64	0.00	0.00	15	5.3000E+02	0.0079	0.0022	82	19	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_3_RAD_1	2	61	**17.21**	**5.53**	8.15	15.47	0.00	0.00	27	5.3100E+02	0.0063	0.0016	102	106	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_3_RAD_2	3	62	**17.35**	**17.90**	15.14	118.04	827.61	50.70	1	5.3000E+02	0.0002	0.0001	10	11	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_3_RAD_3	4	63	**15.07**	**9.51**	10.80	37.99	468.45	23.00	3	5.3000E+02	0.0008	0.0002	33	131	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_3_RAD_4	5	64	**21.26**	**11.94**	14.34	43.87	171.22	7.63	4	5.3100E+02	0.0008	0.0002	34	11	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_3a_RAD_4	5	64	**3.97**	**4.10**	3.47	27.25	169.27	8.54	1	5.3100E+02	0.0010	0.0003	53	17	0	2132117	59574.77	234	7.98
		w. avg.	64	***5.79***	***3.88***															

75b	P1408_001_Zrn_A_3_RAD_6	7	65	**32.87**	**10.62**	15.63	29.71	28.96	2.13	25	5.3000E+02	0.0031	0.0008	101	27	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_3_RAD_7	8	66	**25.35**	**8.58**	12.45	24.41	496.25	28.07	20	5.3100E+02	0.0032	0.0008	119	164	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_3_RAD_8	9	67	**56.46**	**19.78**	28.42	56.98	1107.87	34.61	17	5.3000E+02	0.0012	0.0003	54	109	0	2132117	59574.77	234	7.98
75b	P1408_001_Zrn_A_3_RAD_9	10	68	**10.54**	**3.71**	5.32	10.72	488.01	19.22	17	5.3000E+02	0.0065	0.0016	239	420	0	2132117	59574.77	234	7.98

note: weighted averages are used for replicated spots on single grain analyses for 75b

Upper Siwalik

DTC3	P1408_007_Zrn_A_1_RAD_0	1	1	**2.10**	**1.11**	1.37	3.96	114.37	5.22	4	5.3004E+02	0.0040	0.0007	533	17	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_1	2	2	**10.36**	**4.97**	6.39	16.67	513.76	21.65	5	5.3060E+02	0.0010	0.0002	135	292	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_2	3	3	**2.41**	**4.20**	2.21	26.15	302.12	114.16	2	5.3191E+02	0.0017	0.0027	267	478	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_3	4	4	**19.51**	**11.77**	13.67	45.48	70.32	7.48	3	5.2898E+02	0.0003	0.0001	45	145	2	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_4	5	5	**0.00**	**0.00**	0.00	7.22	1546.55	43.31	0	5.3089E+02	0.0009	0.0002	118	146	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_5	6	6	**3.32**	**1.12**	1.63	3.21	451.45	22.13	12	5.3263E+02	0.0075	0.0013	897	518	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_6	7	7	**12.94**	**13.14**	11.24	85.10	504.05	55.01	1	5.3002E+02	0.0002	0.0000	22	33	2	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_7	8	8	**3.94**	**2.09**	2.58	7.44	1629.85	57.85	4	5.3044E+02	0.0021	0.0004	311	620	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_8	9	9	**0.00**	**0.00**	0.00	11.09	1600.52	57.41	0	5.3179E+02	0.0006	0.0001	77	78	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_9	10	10	**4.08**	**2.46**	2.86	9.56	383.57	23.13	3	5.2933E+02	0.0015	0.0003	146	97	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_10	11	11	**10.45**	**5.05**	6.48	16.99	430.17	18.17	5	5.3039E+02	0.0010	0.0002	214	160	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_11	12	12	**2.60**	**2.64**	2.26	17.22	1523.95	54.43	1	5.3046E+02	0.0008	0.0001	117	121	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_12	13	13	**3.77**	**1.28**	1.85	3.64	479.98	18.24	12	5.3065E+02	0.0066	0.0012	1621	1251	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_13	14	14	**3.83**	**1.84**	2.36	6.17	1600.04	54.03	5	5.3050E+02	0.0027	0.0005	206	324	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_14	15	15	**2.77**	**1.67**	1.94	6.48	451.38	21.67	3	5.3054E+02	0.0023	0.0004	343	513	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_15	16	16	**4.23**	**3.08**	3.24	13.91	482.17	19.97	2	5.3049E+02	0.0010	0.0002	148	196	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_16	17	17	**4.89**	**1.93**	2.67	5.87	1076.03	39.60	8	5.3034E+02	0.0034	0.0006	455	583	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_17	18	18	**19.59**	**5.47**	8.38	14.62	503.66	17.45	21	5.2990E+02	0.0022	0.0004	341	329	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_18	19	19	**4.59**	**1.81**	2.50	5.51	1693.58	39.99	8	5.3066E+02	0.0036	0.0006	509	275	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_20	21	20	**1.79**	**1.30**	1.38	5.91	1623.24	46.34	2	5.3033E+02	0.0023	0.0004	342	359	2	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_21	22	21	**3.97**	**1.50**	2.10	4.46	1443.73	41.11	9	5.3189E+02	0.0047	0.0008	434	461	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_22	23	22	**0.00**	**0.00**	0.00	3.44	1655.21	69.08	0	5.2947E+02	0.0018	0.0003	296	122	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_23	24	23	**3.19**	**1.93**	2.24	7.47	1577.53	56.03	3	5.3216E+02	0.0020	0.0003	236	274	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_24	25	24	**1.18**	**0.57**	0.73	1.90	1445.07	51.84	5	5.2965E+02	0.0089	0.0016	1740	5745	2	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_25	26	25	**6.70**	**2.33**	3.36	6.75	373.68	13.83	11	5.3156E+02	0.0034	0.0006	573	130	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_26	27	26	**2.21**	**0.98**	1.30	3.16	1269.98	48.43	6	5.3054E+02	0.0056	0.0010	563	135	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_27	28	27	**5.20**	**5.28**	4.52	34.31	75.11	9.15	1	5.3051E+02	0.0004	0.0001	71	170	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_28	29	28	**3.85**	**1.23**	1.82	3.44	479.18	16.76	14	5.3029E+02	0.0076	0.0013	1430	1414	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_29	30	29	**4.31**	**1.92**	2.54	6.17	513.52	19.59	6	5.3161E+02	0.0029	0.0005	460	431	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_30	31	30	**5.30**	**1.79**	2.61	5.12	40.23	2.29	12	5.2985E+02	0.0047	0.0008	821	2425	2	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_31	32	31	**2.61**	**1.38**	1.71	4.92	86.95	3.60	4	5.2877E+02	0.0032	0.0006	712	1424	2	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_32	33	32	**11.08**	**5.87**	7.23	20.82	486.47	20.06	4	5.3181E+02	0.0007	0.0001	130	208	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_33	34	33	**11.59**	**3.08**	4.77	8.11	15.34	0.83	25	5.3090E+02	0.0045	0.0008	690	26	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_34	35	34	**17.48**	**12.73**	13.41	57.24	1261.16	49.90	2	5.3056E+02	0.0002	0.0000	36	594	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_35	36	35	**0.00**	**0.00**	0.00	11.99	1588.55	43.18	0	5.3059E+02	0.0005	0.0001	90	98	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_36	37	36	**0.00**	**0.00**	0.00	2.10	481.22	21.33	0	5.3005E+02	0.0030	0.0005	504	623	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_37	38	37	**2.92**	**1.55**	1.91	5.51	1142.76	55.72	4	5.2979E+02	0.0029	0.0005	1647	3511	2	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_38	39	38	**3.59**	**1.30**	1.85	3.80	487.67	20.41	10	5.3075E+02	0.0058	0.0010	914	728	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_39	40	39	**1.50**	**1.09**	1.15	4.95	475.71	18.59	2	5.3016E+02	0.0028	0.0005	439	533	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_40	41	40	**6.29**	**3.80**	4.41	14.72	0.00	0.00	3	5.3070E+02	0.0010	0.0002	157	181	2	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_41	42	41	**1.40**	**1.42**	1.21	9.23	1014.54	32.70	1	5.2903E+02	0.0015	0.0003	254	466	2	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_42	43	42	**4.62**	**3.37**	3.54	15.18	1569.59	41.45	2	5.3064E+02	0.0009	0.0002	138	143	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_43	44	43	**0.53**	**0.54**	0.46	3.49	492.35	17.20	1	5.3052E+02	0.0040	0.0007	507	625	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_44	45	44	**7.97**	**4.83**	5.59	18.74	52.79	3.16	3	5.3033E+02	0.0008	0.0001	123	79	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_45	46	45	**0.00**	**0.00**	0.00	7.17	1045.07	47.40	0	5.3055E+02	0.0009	0.0002	99	217	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_46	47	46	**11.78**	**5.82**	7.39	19.82	752.26	76.52	5	5.3060E+02	0.0009	0.0002	138	170	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_48	49	47	**0.00**	**0.00**	0.00	3.96	1032.47	36.16	0	5.3046E+02	0.0016	0.0003	224	295	2	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_49	50	48	**9.82**	**5.92**	6.88	22.94	1601.82	41.92	3	5.3047E+02	0.0006	0.0001	77	109	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_50	51	49	**4.67**	**2.82**	3.27	10.91	908.53	32.61	3	5.3058E+02	0.0013	0.0002	179	161	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_51	52	50	**3.43**	**1.65**	2.12	5.53	437.41	13.39	5	5.3065E+02	0.0030	0.0005	482	143	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_52	53	51	**12.04**	**6.39**	7.87	22.70	31.11	2.86	4	5.3054E+02	0.0007	0.0001	85	3	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_53	54	52	**35.20**	**8.25**	13.15	20.96	48.79	2.35	41	5.3093E+02	0.0024	0.0004	370	581	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_54	55	53	**41.27**	**13.16**	19.43	36.62	1177.61	35.52	14	5.3111E+02	0.0007	0.0001	90	117	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_55	56	54	**3.24**	**1.56**	2.00	5.22	483.16	14.78	5	5.3056E+02	0.0032	0.0006	459	333	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_56	57	55	**8.96**	**2.73**	4.08	7.51	506.41	17.70	16	5.3051E+02	0.0037	0.0006	509	443	2	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_58	59	56	**3.47**	**1.31**	1.84	3.89	1465.93	44.21	9	5.3056E+02	0.0054	0.0009	687	405	3	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_59	60	57	**8.16**	**3.07**	4.32	9.15	515.73	17.84	9	5.3059E+02	0.0023	0.0004	354	398	2	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_60	61	58	**7.75**	**2.37**	3.54	6.52	484.90	20.67	16	4.9254E+02	0.0046	0.0008	527	717	1	1105018	16414.47	89.219	2.8218

DTC3	P1408_007_Zrn_A_1_RAD_61	62	59	**4.41**	**3.22**	3.39	14.53	0.00	0.00	2	5.3052E+02	0.0009	0.0002	119	42	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_62	63	60	**4.18**	**2.52**	2.93	9.78	503.21	25.36	3	5.3058E+02	0.0015	0.0003	212	297	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_63	64	61	**2.71**	**1.30**	1.67	4.37	492.95	17.19	5	5.3130E+02	0.0038	0.0007	446	327	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_64	65	62	**9.15**	**4.85**	5.97	17.20	1015.29	35.30	4	5.3007E+02	0.0009	0.0002	93	144	1	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_65	66	63	**70.43**	**23.12**	33.81	64.69	179.08	10.97	13	5.3097E+02	0.0004	0.0001	52	63	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_66	67	64	**4.31**	**1.91**	2.54	6.16	56.30	3.50	6	4.7268E+02	0.0033	0.0006	529	95	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_67	68	65	**1.67**	**1.22**	1.28	5.49	465.56	16.70	2	5.2944E+02	0.0025	0.0004	342	162	0	1105018	16414.47	89.219	2.8218
DTC3	P1408_007_Zrn_A_1_RAD_68	69	66	**11.53**	**3.03**	4.70	7.94	171.05	11.14	26	5.3047E+02	0.0047	0.0008	542	63	0	1105018	16414.47	89.219	2.8218

4.10.4 Zircon fission track peak decomposition

TABLE A4. Results of peak decomompostion for zircon fission-track cooling ages < 55 Ma with U-Pb ages > 300 Ma. Densityplotter application from Vermeesch et al., 2012, only components >5% used

Sample ID	n	PEAK (Ma)	SIGMA (Ma)	PEAK (Ma)	SIGMA (Ma)	PEAK (Ma)	SIGMA (Ma)
DTC3	45	1.8	1.0	4.1	1.0	-	-
75b	43	4.7	1.0	12.3	0.9	25.0	13.0
50b	37	6.0	1.5	9.9	1.7	17.7	5.2
25c	40	11.4	2.1	17.2	2.5	27.1	5.9
5b	16	16.7	1.3	-	-	-	-

4.10.5 Detrital muscovite $^{40}Ar/^{39}Ar$ analyses

TABLE A5. Detrtial muscovite 40Ar/39Ar analytical data

Sample ID	Lab ID#	J	± 2s	$^{40}Ar^{*}/^{39}Ar$	± 2s	$^{40}Ar/^{39}Ar$	± 2s	$^{38}Ar/^{39}Ar$	± 2s	$^{36}Ar/^{39}Ar$	± 2s	Cl/K	^{39}Ar (moles)	$\%^{40}Ar^{*}$	**Age (Ma)**	**± 2s**
Middle Siwalik																
5b	688-01	4.5580E-04	6.7184E-06	461.341	1.625	463.109	3.246	0.0124	0.0011	0.0059	0.0010	0.002	1.09E-16	99.62	**344.29**	**2.21**
5b	688-02	4.5580E-04	6.7184E-06	39.279	0.216	40.448	0.330	0.0128	0.0010	0.0039	0.0010	0.002	9.49E-17	97.15	**32.01**	**0.35**
5b	688-03	4.5580E-04	6.7184E-06	35.392	0.446	37.372	0.482	0.0124	0.0024	0.0067	0.0026	0.002	3.25E-17	94.74	**28.87**	**0.72**
5b	688-04	4.5580E-04	6.7184E-06	57.568	0.221	59.070	0.395	0.0126	0.0009	0.0050	0.0007	0.002	1.32E-16	97.48	**46.72**	**0.35**
5b	688-05	4.5580E-04	6.7184E-06	34.004	0.243	35.245	0.355	0.0124	0.0012	0.0041	0.0012	0.002	7.78E-17	96.52	**27.75**	**0.39**
5b	688-06	4.5580E-04	6.7184E-06	69.802	0.440	70.274	0.734	0.0123	0.0017	0.0015	0.0017	0.002	5.36E-17	99.35	**56.50**	**0.70**
5b	688-07	4.5580E-04	6.7184E-06	69.950	0.331	71.155	0.597	0.0118	0.0011	0.0040	0.0010	0.002	9.41E-17	98.33	**56.62**	**0.53**
5b	688-08	4.5580E-04	6.7184E-06	34.837	0.353	36.760	0.454	0.0122	0.0018	0.0065	0.0019	0.002	4.47E-17	94.81	**28.42**	**0.57**
5b	688-09	4.5580E-04	6.7184E-06	65.665	0.203	66.493	0.387	0.0128	0.0006	0.0027	0.0004	0.002	2.16E-16	98.78	**53.20**	**0.32**
5b	688-10	4.5580E-04	6.7184E-06	29.361	0.170	31.123	0.225	0.0115	0.0009	0.0059	0.0009	0.002	1.03E-16	94.39	**23.98**	**0.28**
5b	688-11	4.5580E-04	6.7184E-06	75.747	0.314	78.331	0.591	0.0136	0.0008	0.0087	0.0009	0.002	1.27E-16	96.72	**61.23**	**0.50**
5b	688-12	4.5580E-04	6.7184E-06	32.206	0.212	32.842	0.266	0.0112	0.0011	0.0021	0.0011	0.002	7.62E-17	98.11	**26.29**	**0.34**
5b	688-13	4.5580E-04	6.7184E-06	64.757	0.209	66.386	0.388	0.0120	0.0007	0.0055	0.0006	0.002	1.61E-16	97.57	**52.48**	**0.33**
5b	688-14	4.5580E-04	6.7184E-06	68.080	0.391	68.987	0.625	0.0127	0.0015	0.0030	0.0016	0.002	5.34E-17	98.71	**55.13**	**0.62**
5b	688-15	4.5580E-04	6.7184E-06	34.417	0.210	37.523	0.296	0.0139	0.0011	0.0105	0.0011	0.002	9.13E-17	91.76	**28.08**	**0.34**
5b	688-16	4.5580E-04	6.7184E-06	28.698	0.383	29.145	0.320	0.0128	0.0021	0.0015	0.0024	0.002	4.00E-17	98.52	**23.44**	**0.62**
5b	688-17	4.5580E-04	6.7184E-06	70.523	0.854	71.470	1.256	0.0125	0.0032	0.0032	0.0040	0.002	2.23E-17	98.70	**57.07**	**1.36**
5b	688-18	4.5580E-04	6.7184E-06	540.490	3.224	542.894	6.439	0.0137	0.0020	0.0081	0.0023	0.002	3.71E-17	99.56	**397.28**	**4.25**
5b	688-19	4.5580E-04	6.7184E-06	21.208	0.210	22.376	0.216	0.0134	0.0014	0.0039	0.0012	0.002	6.84E-17	94.85	**17.35**	**0.34**
5b	688-20	4.5580E-04	6.7184E-06	81.062	0.800	83.003	1.227	0.0151	0.0033	0.0065	0.0036	0.002	2.42E-17	97.68	**65.45**	**1.27**
5b	688-21	4.5580E-04	6.7184E-06	31.728	0.413	33.135	0.395	0.0112	0.0021	0.0047	0.0025	0.002	3.67E-17	95.80	**25.90**	**0.67**
5b	688-22	4.5580E-04	6.7184E-06	27.801	0.235	28.343	0.273	0.0127	0.0014	0.0018	0.0013	0.002	6.55E-17	98.14	**22.72**	**0.38**
5b	688-23	4.5580E-04	6.7184E-06	30.829	0.480	31.623	0.508	0.0140	0.0027	0.0026	0.0028	0.002	2.82E-17	97.53	**25.17**	**0.78**
5b	688-24	4.5580E-04	6.7184E-06	43.097	0.263	44.135	0.424	0.0115	0.0011	0.0035	0.0011	0.002	7.47E-17	97.68	**35.09**	**0.42**
5b	688-25	4.5580E-04	6.7184E-06	29.606	0.250	31.830	0.292	0.0130	0.0014	0.0075	0.0014	0.002	6.51E-17	93.06	**24.18**	**0.41**
5b	688-26	4.5580E-04	6.7184E-06	29.918	0.552	30.943	0.489	0.0126	0.0030	0.0034	0.0034	0.002	2.79E-17	96.74	**24.43**	**0.90**
5b	688-27	4.5580E-04	6.7184E-06	136.847	0.534	137.459	1.047	0.0105	0.0010	0.0020	0.0008	0.002	1.15E-16	99.57	**109.15**	**0.83**
5b	688-28	4.5580E-04	6.7184E-06	24.072	0.178	25.073	0.213	0.0121	0.0011	0.0033	0.0010	0.002	8.92E-17	96.07	**19.69**	**0.29**
5b	688-29	4.5580E-04	6.7184E-06	38.111	0.331	39.933	0.437	0.0132	0.0017	0.0061	0.0017	0.002	4.76E-17	95.48	**31.07**	**0.53**
5b	688-30	4.5580E-04	6.7184E-06	42.657	0.287	44.294	0.408	0.0113	0.0015	0.0055	0.0014	0.002	6.34E-17	96.34	**34.74**	**0.46**
5b	688-31	4.5580E-04	6.7184E-06	48.489	0.658	50.514	0.832	0.0169	0.0035	0.0068	0.0035	0.003	2.41E-17	96.02	**39.44**	**1.06**
5b	688-32	4.5580E-04	6.7184E-06	42.625	0.236	43.427	0.369	0.0125	0.0012	0.0027	0.0010	0.002	8.45E-17	98.19	**34.71**	**0.38**
5b	688-33	4.5580E-04	6.7184E-06	60.254	0.286	61.671	0.503	0.0132	0.0010	0.0047	0.0010	0.002	9.03E-17	97.73	**48.88**	**0.46**
5b	688-34	4.5580E-04	6.7184E-06	21.338	0.369	26.061	0.325	0.0155	0.0022	0.0159	0.0023	0.002	4.10E-17	81.93	**17.46**	**0.60**
5b	688-35	4.5580E-04	6.7184E-06	201.467	1.351	203.987	2.654	0.0147	0.0019	0.0085	0.0022	0.002	4.31E-17	98.77	**158.49**	**2.03**
5b	688-36	4.5580E-04	6.7184E-06	31.073	0.350	35.870	0.374	0.0147	0.0018	0.0162	0.0021	0.002	5.46E-17	86.67	**25.37**	**0.57**
5b	688-37	4.5580E-04	6.7184E-06	43.819	0.474	44.752	0.591	0.0125	0.0024	0.0031	0.0025	0.002	3.54E-17	97.95	**35.67**	**0.76**
5b	688-38	4.5580E-04	6.7184E-06	32.851	0.280	33.483	0.357	0.0140	0.0015	0.0021	0.0015	0.002	5.85E-17	98.16	**26.81**	**0.45**
5b	688-39	4.5580E-04	6.7184E-06	31.512	0.706	32.699	0.609	0.0128	0.0036	0.0040	0.0043	0.002	1.99E-17	96.41	**25.73**	**1.14**
5b	688-40	4.5580E-04	6.7184E-06	55.842	1.212	59.254	1.393	0.0198	0.0058	0.0115	0.0069	0.003	1.32E-17	94.27	**45.34**	**1.94**
5b	688-41	4.5580E-04	6.7184E-06	30.675	0.201	31.872	0.266	0.0126	0.0010	0.0040	0.0010	0.002	8.29E-17	96.29	**25.05**	**0.33**
5b	688-42	4.5580E-04	6.7184E-06	26.425	0.594	28.211	0.491	0.0117	0.0032	0.0060	0.0037	0.002	2.27E-17	93.72	**21.60**	**0.96**
5b	688-43	4.5580E-04	6.7184E-06	75.363	0.578	77.034	0.938	0.0154	0.0023	0.0056	0.0024	0.002	3.47E-17	97.85	**60.93**	**0.92**
5b	688-44	4.5580E-04	6.7184E-06	37.263	0.534	37.858	0.572	0.0152	0.0030	0.0020	0.0031	0.002	2.70E-17	98.47	**30.38**	**0.86**
5b	688-45	4.5580E-04	6.7184E-06	66.573	0.274	67.088	0.492	0.0119	0.0010	0.0017	0.0008	0.002	1.10E-16	99.26	**53.93**	**0.44**
5b	688-46	4.5580E-04	6.7184E-06	38.606	0.206	40.143	0.289	0.0123	0.0012	0.0052	0.0010	0.002	8.69E-17	96.21	**31.47**	**0.33**
5b	688-47	4.5580E-04	6.7184E-06	42.674	0.301	42.669	0.432	0.0127	0.0017	-0.0001	0.0014	0.002	5.78E-17	100.00	**34.75**	**0.49**
5b	688-48	4.5580E-04	6.7184E-06	33.733	0.200	34.327	0.263	0.0114	0.0012	0.0020	0.0010	0.002	8.12E-17	98.31	**27.53**	**0.32**
5b	688-49	4.5580E-04	6.7184E-06	30.829	0.383	32.037	0.380	0.0110	0.0020	0.0040	0.0023	0.002	3.86E-17	96.27	**25.17**	**0.62**
5b	688-50	4.5580E-04	6.7184E-06	36.564	1.000	39.677	0.861	0.0091	0.0048	0.0105	0.0062	0.001	1.60E-17	92.19	**29.82**	**1.62**
5b	688-51	4.5580E-04	6.7184E-06	82.640	0.378	84.414	0.719	0.0125	0.0010	0.0060	0.0009	0.002	1.04E-16	97.92	**66.70**	**0.60**
5b	688-52	4.5580E-04	6.7184E-06	30.276	0.269	30.953	0.293	0.0108	0.0015	0.0022	0.0015	0.002	5.89E-17	97.86	**24.72**	**0.44**
5b	688-53	4.5580E-04	6.7184E-06	23.579	0.193	25.954	0.204	0.0130	0.0012	0.0080	0.0011	0.002	8.39E-17	90.91	**19.28**	**0.31**

5b	688-54	4.5580E-04	6.7184E-06	65.281	0.390	68.403	0.660	0.0140	0.0015	0.0105	0.0016	0.002	6.46E-17	95.46	**52.89**	**0.62**
5b	688-55	4.5580E-04	6.7184E-06	60.973	0.427	61.613	0.689	0.0113	0.0018	0.0021	0.0017	0.002	5.70E-17	98.99	**49.45**	**0.68**
5b	688-56	4.5580E-04	6.7184E-06	56.925	0.485	57.252	0.726	0.0108	0.0018	0.0011	0.0022	0.002	4.23E-17	99.45	**46.21**	**0.78**
5b	688-57	4.5580E-04	6.7184E-06	45.134	0.687	47.452	0.818	0.0070	0.0032	0.0078	0.0038	0.001	2.31E-17	95.15	**36.73**	**1.11**
5b	688-58	4.5580E-04	6.7184E-06	23.515	0.445	24.985	0.400	0.0086	0.0022	0.0049	0.0027	0.001	3.23E-17	94.17	**19.23**	**0.72**
5b	688-59	4.5580E-04	6.7184E-06	82.380	0.484	83.309	0.893	0.0109	0.0014	0.0031	0.0013	0.002	6.16E-17	98.90	**66.50**	**0.77**
25c	700-01	4.7280E-04	5.5740E-06	37.361	0.524	39.590	0.607	0.0086	0.0029	0.0075	0.0030	0.001	3.07E-17	94.41	**31.59**	**0.88**
25c	700-02	4.7280E-04	5.5740E-06	17.290	0.420	18.921	0.300	0.0130	0.0027	0.0055	0.0027	0.002	3.16E-17	91.45	**14.69**	**0.71**
25c	700-03	4.7280E-04	5.5740E-06	26.682	0.344	27.709	0.342	0.0082	0.0021	0.0034	0.0020	0.001	4.00E-17	96.35	**22.62**	**0.58**
25c	700-04	4.7280E-04	5.5740E-06	17.953	0.289	20.902	0.243	0.0131	0.0018	0.0099	0.0018	0.002	4.97E-17	85.95	**15.25**	**0.49**
25c	700-05	4.7280E-04	5.5740E-06	21.025	0.266	23.171	0.216	0.0139	0.0016	0.0072	0.0017	0.002	5.44E-17	90.80	**17.85**	**0.45**
25c	700-06	4.7280E-04	5.5740E-06	16.289	0.592	20.837	0.362	0.0164	0.0034	0.0153	0.0039	0.002	2.37E-17	78.23	**13.84**	**1.00**
25c	700-07	4.7280E-04	5.5740E-06	27.931	0.515	28.731	0.450	0.0122	0.0027	0.0027	0.0032	0.002	2.56E-17	97.27	**23.67**	**0.87**
25c	700-08	4.7280E-04	5.5740E-06	17.539	0.289	21.502	0.244	0.0167	0.0018	0.0134	0.0018	0.002	5.24E-17	81.63	**14.90**	**0.49**
25c	700-09	4.7280E-04	5.5740E-06	17.904	0.571	18.654	0.358	0.0157	0.0034	0.0025	0.0037	0.003	2.15E-17	96.06	**15.21**	**0.97**
25c	700-10	4.7280E-04	5.5740E-06	17.524	0.213	19.154	0.179	0.0162	0.0013	0.0055	0.0013	0.003	6.39E-17	91.57	**14.89**	**0.36**
25c	700-11	4.7280E-04	5.5740E-06	28.366	0.320	34.167	0.332	0.0167	0.0018	0.0196	0.0020	0.002	5.43E-17	83.06	**24.04**	**0.54**
25c	700-12	4.7280E-04	5.5740E-06	17.363	0.350	21.252	0.255	0.0141	0.0023	0.0131	0.0023	0.002	4.12E-17	81.76	**14.75**	**0.59**
25c	700-13	4.7280E-04	5.5740E-06	17.984	0.159	19.221	0.137	0.0138	0.0010	0.0041	0.0010	0.002	8.93E-17	93.64	**15.27**	**0.27**
25c	700-14	4.7280E-04	5.5740E-06	16.265	0.280	18.296	0.219	0.0132	0.0020	0.0068	0.0018	0.002	4.71E-17	88.98	**13.82**	**0.47**
25c	700-15	4.7280E-04	5.5740E-06	17.368	0.281	19.452	0.199	0.0124	0.0017	0.0070	0.0018	0.002	4.87E-17	89.35	**14.75**	**0.48**
25c	700-16	4.7280E-04	5.5740E-06	17.448	0.226	18.345	0.185	0.0120	0.0015	0.0030	0.0014	0.002	6.57E-17	95.20	**14.82**	**0.38**
25c	700-17	4.7280E-04	5.5740E-06	16.830	0.280	18.861	0.206	0.0117	0.0018	0.0068	0.0018	0.002	5.18E-17	89.31	**14.30**	**0.47**
25c	700-18	4.7280E-04	5.5740E-06	17.920	0.166	19.168	0.159	0.0120	0.0011	0.0042	0.0010	0.002	9.16E-17	93.57	**15.22**	**0.28**
25c	700-19	4.7280E-04	5.5740E-06	18.068	0.901	18.132	0.510	0.0101	0.0053	0.0002	0.0059	0.002	1.42E-17	99.73	**15.35**	**1.52**
25c	700-20	4.7280E-04	5.5740E-06	20.465	0.441	21.005	0.317	0.0115	0.0026	0.0018	0.0028	0.002	3.09E-17	97.50	**17.37**	**0.75**
25c	700-21	4.7280E-04	5.5740E-06	29.837	0.932	29.913	0.707	0.0127	0.0048	0.0002	0.0058	0.002	1.60E-17	99.80	**25.27**	**1.57**
25c	700-22	4.7280E-04	5.5740E-06	17.297	0.181	19.431	0.159	0.0149	0.0012	0.0072	0.0011	0.002	8.24E-17	89.09	**14.69**	**0.31**
25c	700-23	4.7280E-04	5.5740E-06	16.725	0.465	18.906	0.287	0.0139	0.0026	0.0073	0.0030	0.002	2.85E-17	88.54	**14.21**	**0.79**
25c	700-24	4.7280E-04	5.5740E-06	24.186	0.386	25.339	0.310	0.0127	0.0023	0.0039	0.0024	0.002	3.57E-17	95.51	**20.51**	**0.65**
25c	700-25	4.7280E-04	5.5740E-06	21.383	0.368	21.655	0.280	0.0105	0.0022	0.0009	0.0023	0.002	3.96E-17	98.82	**18.15**	**0.62**
25c	700-26	4.7280E-04	5.5740E-06	18.191	0.361	21.463	0.240	0.0143	0.0020	0.0110	0.0023	0.002	4.64E-17	84.82	**15.45**	**0.61**
25c	700-27	4.7280E-04	5.5740E-06	29.990	0.497	39.017	0.544	0.0171	0.0027	0.0305	0.0031	0.002	3.60E-17	76.89	**25.40**	**0.84**
25c	700-28	4.7280E-04	5.5740E-06	18.124	0.328	20.702	0.277	0.0133	0.0016	0.0087	0.0021	0.002	4.96E-17	87.61	**15.39**	**0.55**
25c	700-29	4.7280E-04	5.5740E-06	20.003	0.151	21.297	0.172	0.0126	0.0009	0.0043	0.0009	0.002	1.10E-16	94.00	**16.98**	**0.26**
25c	700-30	4.7280E-04	5.5740E-06	17.044	0.269	19.363	0.231	0.0135	0.0016	0.0078	0.0017	0.002	5.28E-17	88.10	**14.48**	**0.46**
25c	700-31	4.7280E-04	5.5740E-06	35.870	0.599	39.406	0.684	0.0114	0.0029	0.0119	0.0035	0.002	2.67E-17	91.06	**30.34**	**1.01**
25c	700-32	4.7280E-04	5.5740E-06	17.390	0.205	18.057	0.177	0.0114	0.0015	0.0022	0.0013	0.002	6.10E-17	96.39	**14.77**	**0.35**
25c	700-33	4.7280E-04	5.5740E-06	19.726	0.538	22.037	0.380	0.0131	0.0031	0.0078	0.0035	0.002	2.32E-17	89.58	**16.75**	**0.91**
25c	700-34	4.7280E-04	5.5740E-06	18.592	0.701	18.795	0.391	0.0065	0.0040	0.0006	0.0046	0.001	1.81E-17	99.00	**15.79**	**1.19**
25c	700-35	4.7280E-04	5.5740E-06	23.782	0.191	25.610	0.213	0.0137	0.0012	0.0061	0.0011	0.002	8.44E-17	92.92	**20.17**	**0.32**
25c	700-36	4.7280E-04	5.5740E-06	24.189	0.111	24.727	0.174	0.0120	0.0008	0.0018	0.0005	0.002	1.38E-16	97.89	**20.52**	**0.19**
25c	700-37	4.7280E-04	5.5740E-06	17.922	0.143	20.292	0.166	0.0129	0.0011	0.0080	0.0008	0.002	9.26E-17	88.39	**15.22**	**0.24**
25c	700-38	4.7280E-04	5.5740E-06	17.015	0.258	20.254	0.255	0.0130	0.0017	0.0109	0.0016	0.002	4.41E-17	84.08	**14.46**	**0.44**
25c	700-39	4.7280E-04	5.5740E-06	18.190	0.321	18.519	0.265	0.0091	0.0021	0.0011	0.0020	0.002	3.02E-17	98.31	**15.45**	**0.54**
25c	700-40	4.7280E-04	5.5740E-06	15.211	0.125	18.565	0.134	0.0139	0.0009	0.0113	0.0008	0.002	9.69E-17	82.00	**12.93**	**0.21**
25c	700-41	4.7280E-04	5.5740E-06	20.335	0.171	23.662	0.174	0.0151	0.0010	0.0112	0.0010	0.002	1.03E-16	86.00	**17.26**	**0.29**
25c	700-42	4.7280E-04	5.5740E-06	17.632	0.157	18.588	0.158	0.0132	0.0011	0.0032	0.0009	0.002	8.56E-17	94.94	**14.98**	**0.27**
25c	700-43	4.7280E-04	5.5740E-06	17.066	0.144	19.820	0.148	0.0136	0.0010	0.0093	0.0009	0.002	1.02E-16	86.18	**14.50**	**0.24**
25c	700-44	4.7280E-04	5.5740E-06	17.328	0.120	18.147	0.135	0.0120	0.0009	0.0027	0.0007	0.002	1.11E-16	95.56	**14.72**	**0.20**
25c	700-45	4.7280E-04	5.5740E-06	18.546	0.639	19.937	0.391	0.0112	0.0032	0.0047	0.0041	0.002	2.03E-17	93.09	**15.75**	**1.08**
25c	700-46	4.7280E-04	5.5740E-06	26.610	0.219	29.647	0.267	0.0133	0.0013	0.0102	0.0012	0.002	7.99E-17	89.80	**22.56**	**0.37**
25c	700-47	4.7280E-04	5.5740E-06	16.846	0.106	17.114	0.111	0.0120	0.0009	0.0009	0.0006	0.002	1.37E-16	98.52	**14.31**	**0.18**
25c	700-48	4.7280E-04	5.5740E-06	23.431	0.464	24.426	0.362	0.0115	0.0027	0.0033	0.0029	0.002	2.64E-17	95.99	**19.88**	**0.78**
25c	700-49	4.7280E-04	5.5740E-06	17.595	0.206	19.744	0.215	0.0115	0.0014	0.0072	0.0012	0.002	6.97E-17	89.19	**14.95**	**0.35**

25c	700-50	4.7280E-04	5.5740E-06	17.378	0.207	18.866	0.197	0.0130	0.0015	0.0050	0.0013	0.002	6.29E-17	92.19	**14.76**	**0.35**
25c	700-51	4.7280E-04	5.5740E-06	26.224	0.190	27.797	0.215	0.0129	0.0012	0.0053	0.0011	0.002	8.93E-17	94.39	**22.23**	**0.32**
25c	700-52	4.7280E-04	5.5740E-06	21.830	0.104	23.282	0.142	0.0126	0.0008	0.0049	0.0005	0.002	1.69E-16	93.82	**18.52**	**0.18**
25c	700-53	4.7280E-04	5.5740E-06	45.848	0.273	47.551	0.415	0.0126	0.0013	0.0057	0.0013	0.002	6.64E-17	96.45	**38.69**	**0.46**
25c	700-54	4.7280E-04	5.5740E-06	43.644	0.290	44.802	0.463	0.0118	0.0016	0.0039	0.0012	0.002	6.25E-17	97.45	**36.85**	**0.48**
25c	700-55	4.7280E-04	5.5740E-06	18.508	0.194	20.568	0.179	0.0136	0.0012	0.0069	0.0012	0.002	8.30E-17	90.05	**15.72**	**0.33**
25c	700-56	4.7280E-04	5.5740E-06	17.473	0.136	20.210	0.145	0.0141	0.0009	0.0092	0.0008	0.002	1.24E-16	86.52	**14.84**	**0.23**
25c	700-57	4.7280E-04	5.5740E-06	18.161	0.180	19.563	0.192	0.0129	0.0011	0.0047	0.0011	0.002	8.01E-17	92.91	**15.42**	**0.30**
25c	700-58	4.7280E-04	5.5740E-06	22.244	0.186	23.223	0.207	0.0128	0.0013	0.0033	0.0011	0.002	7.69E-17	95.85	**18.87**	**0.31**
25c	700-59	4.7280E-04	5.5740E-06	17.028	0.140	18.523	0.122	0.0117	0.0009	0.0050	0.0009	0.002	1.02E-16	92.01	**14.47**	**0.24**
25c	700-60	4.7280E-04	5.5740E-06	20.814	0.278	21.984	0.232	0.0130	0.0019	0.0039	0.0017	0.002	4.66E-17	94.75	**17.67**	**0.47**
50b	693-01	4.6580E-04	5.3798E-06	24.327	0.133	25.097	0.180	0.0123	0.0009	0.0026	0.0007	0.002	1.37E-16	96.99	**20.33**	**0.22**
50b	693-02	4.6580E-04	5.3798E-06	24.897	0.152	25.826	0.207	0.0132	0.0009	0.0031	0.0008	0.002	1.08E-16	96.46	**20.80**	**0.25**
50b	693-03	4.6580E-04	5.3798E-06	18.318	0.423	21.204	0.336	0.0139	0.0024	0.0097	0.0027	0.002	3.09E-17	86.45	**15.33**	**0.71**
50b	693-04	4.6580E-04	5.3798E-06	26.234	0.155	27.767	0.235	0.0125	0.0010	0.0051	0.0007	0.002	1.25E-16	94.53	**21.91**	**0.26**
50b	693-06	4.6580E-04	5.3798E-06	36.336	0.122	37.611	0.201	0.0119	0.0007	0.0043	0.0005	0.002	2.02E-16	96.65	**30.28**	**0.20**
50b	693-07	4.6580E-04	5.3798E-06	25.154	0.125	25.859	0.170	0.0125	0.0008	0.0023	0.0006	0.002	1.36E-16	97.33	**21.01**	**0.21**
50b	693-08	4.6580E-04	5.3798E-06	24.608	0.197	26.174	0.236	0.0125	0.0012	0.0053	0.0011	0.002	7.98E-17	94.07	**20.56**	**0.33**
50b	693-09	4.6580E-04	5.3798E-06	21.106	0.116	21.644	0.124	0.0106	0.0009	0.0018	0.0007	0.002	1.11E-16	97.58	**17.65**	**0.19**
50b	693-10	4.6580E-04	5.3798E-06	25.237	0.132	27.103	0.178	0.0131	0.0008	0.0063	0.0007	0.002	1.25E-16	93.17	**21.08**	**0.22**
50b	693-11	4.6580E-04	5.3798E-06	15.831	0.134	17.425	0.120	0.0129	0.0010	0.0053	0.0008	0.002	1.26E-16	90.93	**13.25**	**0.22**
50b	693-12	4.6580E-04	5.3798E-06	41.143	0.213	42.359	0.354	0.0128	0.0011	0.0041	0.0008	0.002	1.00E-16	97.16	**34.25**	**0.35**
50b	693-13	4.6580E-04	5.3798E-06	21.670	0.113	21.977	0.144	0.0115	0.0008	0.0010	0.0006	0.002	1.36E-16	98.67	**18.12**	**0.19**
50b	693-14	4.6580E-04	5.3798E-06	24.427	0.231	25.073	0.248	0.0135	0.0013	0.0021	0.0013	0.002	6.95E-17	97.49	**20.41**	**0.38**
50b	693-15	4.6580E-04	5.3798E-06	13.647	0.070	14.127	0.076	0.0119	0.0006	0.0016	0.0004	0.002	2.42E-16	96.71	**11.43**	**0.12**
50b	693-16	4.6580E-04	5.3798E-06	21.153	0.263	22.290	0.220	0.0120	0.0017	0.0038	0.0016	0.002	5.67E-17	94.97	**17.69**	**0.44**
50b	693-17	4.6580E-04	5.3798E-06	26.218	0.062	26.501	0.118	0.0119	0.0003	0.0009	0.0001	0.002	7.46E-16	98.99	**21.90**	**0.10**
50b	693-18	4.6580E-04	5.3798E-06	25.734	0.136	27.796	0.188	0.0134	0.0008	0.0069	0.0007	0.002	1.48E-16	92.63	**21.50**	**0.23**
50b	693-19	4.6580E-04	5.3798E-06	37.282	0.139	38.157	0.241	0.0120	0.0008	0.0029	0.0005	0.002	1.85E-16	97.75	**31.06**	**0.23**
50b	693-20	4.6580E-04	5.3798E-06	19.419	0.119	21.080	0.144	0.0133	0.0008	0.0056	0.0007	0.002	1.42E-16	92.19	**16.24**	**0.20**
50b	693-21	4.6580E-04	5.3798E-06	31.972	0.259	33.598	0.321	0.0115	0.0015	0.0055	0.0014	0.002	6.32E-17	95.20	**26.67**	**0.43**
50b	693-22	4.6580E-04	5.3798E-06	80.774	0.463	84.851	0.848	0.0143	0.0016	0.0137	0.0015	0.002	6.13E-17	95.21	**66.63**	**0.75**
50b	693-23	4.6580E-04	5.3798E-06	37.196	0.190	38.039	0.299	0.0110	0.0011	0.0028	0.0008	0.002	1.04E-16	97.82	**30.99**	**0.31**
50b	693-24	4.6580E-04	5.3798E-06	38.969	0.168	40.361	0.276	0.0139	0.0008	0.0047	0.0007	0.002	1.38E-16	96.59	**32.45**	**0.28**
50b	693-25	4.6580E-04	5.3798E-06	22.527	0.125	23.464	0.136	0.0129	0.0009	0.0031	0.0007	0.002	1.26E-16	96.07	**18.83**	**0.21**
50b	693-26	4.6580E-04	5.3798E-06	26.051	0.068	26.431	0.126	0.0125	0.0003	0.0012	0.0002	0.002	5.85E-16	98.62	**21.76**	**0.11**
50b	693-27	4.6580E-04	5.3798E-06	26.148	0.107	28.265	0.167	0.0134	0.0005	0.0071	0.0005	0.002	2.28E-16	92.56	**21.84**	**0.18**
50b	693-28	4.6580E-04	5.3798E-06	21.193	0.210	23.108	0.190	0.0136	0.0013	0.0064	0.0013	0.002	8.03E-17	91.78	**17.72**	**0.35**
50b	693-29	4.6580E-04	5.3798E-06	60.812	0.274	61.811	0.510	0.0141	0.0009	0.0033	0.0007	0.002	1.22E-16	98.41	**50.39**	**0.45**
50b	693-30	4.6580E-04	5.3798E-06	24.375	0.064	24.762	0.097	0.0123	0.0005	0.0013	0.0003	0.002	3.17E-16	98.50	**20.37**	**0.11**
50b	693-31	4.6580E-04	5.3798E-06	115.630	0.370	116.549	0.734	0.0122	0.0006	0.0031	0.0004	0.002	2.19E-16	99.22	**94.64**	**0.59**
50b	693-32	4.6580E-04	5.3798E-06	24.902	0.074	25.404	0.119	0.0122	0.0005	0.0016	0.0003	0.002	2.93E-16	98.09	**20.81**	**0.12**
50b	693-33	4.6580E-04	5.3798E-06	24.972	0.075	25.996	0.139	0.0128	0.0004	0.0034	0.0002	0.002	4.95E-16	96.12	**20.86**	**0.12**
50b	693-34	4.6580E-04	5.3798E-06	25.801	0.092	28.954	0.135	0.0137	0.0005	0.0106	0.0005	0.002	2.97E-16	89.16	**21.55**	**0.15**
50b	693-35	4.6580E-04	5.3798E-06	25.310	0.302	26.085	0.291	0.0127	0.0018	0.0026	0.0018	0.002	5.38E-17	97.09	**21.14**	**0.50**
50b	693-36	4.6580E-04	5.3798E-06	27.895	0.236	31.320	0.243	0.0124	0.0014	0.0115	0.0014	0.002	7.78E-17	89.11	**23.29**	**0.39**
50b	693-37	4.6580E-04	5.3798E-06	25.300	0.285	26.275	0.293	0.0134	0.0017	0.0033	0.0017	0.002	5.94E-17	96.35	**21.14**	**0.47**
50b	693-38	4.6580E-04	5.3798E-06	25.284	0.092	26.101	0.133	0.0125	0.0006	0.0027	0.0004	0.002	2.31E-16	96.93	**21.12**	**0.15**
50b	693-39	4.6580E-04	5.3798E-06	81.569	0.287	82.856	0.548	0.0133	0.0008	0.0043	0.0006	0.002	1.68E-16	98.46	**67.27**	**0.46**
50b	693-40	4.6580E-04	5.3798E-06	15.405	0.278	17.193	0.168	0.0116	0.0018	0.0060	0.0018	0.002	5.49E-17	89.69	**12.90**	**0.46**
50b	693-41	4.6580E-04	5.3798E-06	24.779	0.216	27.142	0.221	0.0121	0.0013	0.0079	0.0013	0.002	8.05E-17	91.35	**20.70**	**0.36**
50b	693-42	4.6580E-04	5.3798E-06	27.748	0.079	29.260	0.123	0.0125	0.0005	0.0051	0.0004	0.002	3.47E-16	94.89	**23.17**	**0.13**
50b	693-43	4.6580E-04	5.3798E-06	27.295	0.175	29.049	0.195	0.0125	0.0012	0.0059	0.0010	0.002	1.03E-16	94.01	**22.79**	**0.29**
50b	693-44	4.6580E-04	5.3798E-06	28.508	0.225	31.913	0.269	0.0140	0.0012	0.0115	0.0013	0.002	9.06E-17	89.38	**23.80**	**0.37**
50b	693-45	4.6580E-04	5.3798E-06	9.923	0.151	10.491	0.082	0.0129	0.0012	0.0019	0.0010	0.002	9.77E-17	94.73	**8.32**	**0.25**

50b	693-46	4.6580E-04	5.3798E-06	17.584	0.156	18.253	0.140	0.0121	0.0011	0.0022	0.0009	0.002	1.07E-16	96.42	**14.72**	**0.26**
50b	693-47	4.6580E-04	5.3798E-06	21.669	0.201	21.743	0.187	0.0137	0.0014	0.0002	0.0012	0.002	7.83E-17	99.73	**18.12**	**0.34**
50b	693-48	4.6580E-04	5.3798E-06	21.701	0.160	22.843	0.164	0.0124	0.0010	0.0038	0.0009	0.002	1.12E-16	95.06	**18.14**	**0.27**
50b	693-49	4.6580E-04	5.3798E-06	9.671	0.061	11.266	0.054	0.0134	0.0005	0.0054	0.0004	0.002	3.24E-16	85.95	**8.11**	**0.10**
50b	693-50	4.6580E-04	5.3798E-06	35.124	0.108	36.905	0.200	0.0139	0.0004	0.0060	0.0003	0.002	4.31E-16	95.22	**29.28**	**0.18**
50b	693-51	4.6580E-04	5.3798E-06	10.616	0.382	12.284	0.173	0.0135	0.0022	0.0056	0.0025	0.002	4.02E-17	86.53	**8.90**	**0.64**
50b	693-52	4.6580E-04	5.3798E-06	16.808	0.335	18.266	0.219	0.0139	0.0019	0.0049	0.0022	0.002	4.72E-17	92.10	**14.07**	**0.56**
50b	693-53	4.6580E-04	5.3798E-06	26.287	0.083	28.811	0.109	0.0133	0.0005	0.0085	0.0004	0.002	3.01E-16	91.29	**21.96**	**0.14**
50b	693-54	4.6580E-04	5.3798E-06	23.624	0.194	23.867	0.191	0.0126	0.0013	0.0008	0.0011	0.002	8.68E-17	99.05	**19.74**	**0.32**
50b	693-55	4.6580E-04	5.3798E-06	32.824	0.251	33.741	0.278	0.0134	0.0015	0.0031	0.0014	0.002	7.08E-17	97.33	**27.37**	**0.42**
50b	693-56	4.6580E-04	5.3798E-06	18.734	0.064	19.173	0.088	0.0123	0.0006	0.0014	0.0003	0.002	3.30E-16	97.79	**15.67**	**0.11**
50b	693-57	4.6580E-04	5.3798E-06	23.190	0.090	23.340	0.124	0.0120	0.0006	0.0005	0.0004	0.002	2.32E-16	99.43	**19.38**	**0.15**
50b	693-58	4.6580E-04	5.3798E-06	16.122	0.191	17.076	0.142	0.0131	0.0013	0.0032	0.0012	0.002	8.41E-17	94.50	**13.50**	**0.32**
50b	693-59	4.6580E-04	5.3798E-06	20.665	0.072	22.078	0.099	0.0126	0.0005	0.0047	0.0004	0.002	3.42E-16	93.67	**17.28**	**0.12**
50b	693-60	4.6580E-04	5.3798E-06	18.222	0.093	18.743	0.108	0.0120	0.0007	0.0017	0.0005	0.002	2.13E-16	97.30	**15.25**	**0.16**

75b	690-01	4.5600E-04	1.0250E-05	15.880	0.089	18.478	0.097	0.0132	0.0006	0.0087	0.0005	0.002	2.20E-16	86.01	**13.02**	**0.14**
75b	690-02	4.5600E-04	1.0250E-05	16.055	0.213	17.808	0.164	0.0127	0.0014	0.0059	0.0014	0.002	6.48E-17	90.23	**13.16**	**0.35**
75b	690-03	4.5600E-04	1.0250E-05	13.753	0.091	15.258	0.084	0.0139	0.0007	0.0050	0.0006	0.002	1.83E-16	90.23	**11.28**	**0.15**
75b	690-04	4.5600E-04	1.0250E-05	233.905	0.779	237.649	1.563	0.0132	0.0009	0.0126	0.0008	0.002	1.41E-16	98.43	**182.83**	**1.16**
75b	690-05	4.5600E-04	1.0250E-05	105.213	0.518	106.604	0.989	0.0119	0.0014	0.0047	0.0012	0.002	7.01E-17	98.71	**84.54**	**0.81**
75b	690-06	4.5600E-04	1.0250E-05	15.411	0.108	16.815	0.106	0.0125	0.0007	0.0047	0.0006	0.002	1.46E-16	91.74	**12.63**	**0.18**
75b	690-07	4.5600E-04	1.0250E-05	23.211	0.081	23.644	0.116	0.0116	0.0005	0.0014	0.0004	0.002	2.32E-16	98.23	**18.99**	**0.13**
75b	690-08	4.5600E-04	1.0250E-05	25.121	0.130	27.214	0.160	0.0128	0.0009	0.0070	0.0007	0.002	1.48E-16	92.36	**20.55**	**0.21**
75b	690-09	4.5600E-04	1.0250E-05	2490.706	5.390	2491.591	10.783	0.0117	0.0005	0.0029	0.0004	0.002	3.58E-16	99.97	**1368.91**	**4.15**
75b	690-10	4.5600E-04	1.0250E-05	16.685	0.143	18.482	0.140	0.0128	0.0010	0.0060	0.0009	0.002	1.07E-16	90.35	**13.67**	**0.23**
75b	690-11	4.5600E-04	1.0250E-05	26.204	0.246	27.161	0.275	0.0111	0.0014	0.0032	0.0014	0.002	6.14E-17	96.53	**21.43**	**0.40**
75b	690-12	4.5600E-04	1.0250E-05	15.544	0.242	17.922	0.199	0.0120	0.0017	0.0080	0.0015	0.002	5.66E-17	86.81	**12.74**	**0.40**
75b	690-13	4.5600E-04	1.0250E-05	26.250	0.085	26.919	0.126	0.0126	0.0006	0.0022	0.0004	0.002	2.47E-16	97.57	**21.47**	**0.14**
75b	690-14	4.5600E-04	1.0250E-05	14.847	0.224	17.421	0.172	0.0143	0.0015	0.0087	0.0014	0.002	6.41E-17	85.30	**12.17**	**0.37**
75b	690-15	4.5600E-04	1.0250E-05	15.583	0.047	16.355	0.062	0.0126	0.0004	0.0026	0.0002	0.002	3.92E-16	95.37	**12.77**	**0.08**
75b	690-16	4.5600E-04	1.0250E-05	13.771	0.122	14.528	0.112	0.0133	0.0010	0.0025	0.0007	0.002	1.17E-16	94.89	**11.29**	**0.20**
75b	690-17	4.5600E-04	1.0250E-05	16.449	0.347	17.065	0.245	0.0163	0.0022	0.0020	0.0022	0.003	3.98E-17	96.48	**13.48**	**0.57**
75b	690-18	4.5600E-04	1.0250E-05	17.666	0.240	22.138	0.230	0.0161	0.0016	0.0151	0.0015	0.002	6.75E-17	79.86	**14.47**	**0.39**
75b	690-19	4.5600E-04	1.0250E-05	16.725	0.080	19.999	0.086	0.0147	0.0006	0.0110	0.0005	0.002	2.62E-16	83.69	**13.71**	**0.13**
75b	690-20	4.5600E-04	1.0250E-05	23.734	0.066	25.437	0.098	0.0127	0.0005	0.0057	0.0003	0.002	3.19E-16	93.36	**19.42**	**0.11**
75b	690-21	4.5600E-04	1.0250E-05	15.421	0.110	18.607	0.121	0.0142	0.0009	0.0107	0.0007	0.002	1.66E-16	82.95	**12.64**	**0.18**
75b	690-22	4.5600E-04	1.0250E-05	16.844	0.118	17.674	0.127	0.0130	0.0009	0.0028	0.0007	0.002	1.15E-16	95.39	**13.80**	**0.19**
75b	690-23	4.5600E-04	1.0250E-05	31.651	0.202	32.224	0.267	0.0115	0.0013	0.0019	0.0010	0.002	8.63E-17	98.27	**25.85**	**0.33**
75b	690-24	4.5600E-04	1.0250E-05	15.820	0.179	16.691	0.166	0.0119	0.0014	0.0029	0.0011	0.002	7.61E-17	94.87	**12.97**	**0.29**
75b	690-25	4.5600E-04	1.0250E-05	23.832	0.089	24.602	0.140	0.0120	0.0006	0.0026	0.0004	0.002	2.03E-16	96.93	**19.50**	**0.14**
75b	690-26	4.5600E-04	1.0250E-05	25.727	0.222	25.841	0.247	0.0107	0.0014	0.0003	0.0013	0.002	6.51E-17	99.62	**21.04**	**0.36**
75b	690-27	4.5600E-04	1.0250E-05	15.699	0.096	17.913	0.106	0.0115	0.0007	0.0074	0.0006	0.002	1.90E-16	87.71	**12.87**	**0.16**
75b	690-28	4.5600E-04	1.0250E-05	20.288	0.128	21.960	0.147	0.0131	0.0008	0.0056	0.0007	0.002	1.42E-16	92.45	**16.61**	**0.21**
75b	690-29	4.5600E-04	1.0250E-05	1902.608	5.411	1903.650	10.827	0.0109	0.0008	0.0035	0.0006	0.002	1.87E-16	99.95	**1126.86**	**4.77**
75b	690-30	4.5600E-04	1.0250E-05	17.436	0.094	22.661	0.115	0.0150	0.0006	0.0176	0.0006	0.002	2.81E-16	77.00	**14.29**	**0.15**
75b	690-31	4.5600E-04	1.0250E-05	16.282	0.115	17.659	0.119	0.0138	0.0008	0.0046	0.0007	0.002	1.33E-16	92.29	**13.34**	**0.19**
75b	690-32	4.5600E-04	1.0250E-05	22.407	0.081	23.407	0.107	0.0125	0.0006	0.0033	0.0004	0.002	2.27E-16	95.79	**18.34**	**0.13**
75b	690-33	4.5600E-04	1.0250E-05	15.667	0.044	16.295	0.058	0.0123	0.0005	0.0021	0.0002	0.002	4.45E-16	96.24	**12.84**	**0.07**
75b	690-34	4.5600E-04	1.0250E-05	14.833	0.094	15.939	0.105	0.0129	0.0007	0.0037	0.0005	0.002	1.73E-16	93.15	**12.16**	**0.15**
75b	690-35	4.5600E-04	1.0250E-05	25.852	0.111	26.670	0.162	0.0125	0.0008	0.0027	0.0005	0.002	1.68E-16	96.99	**21.14**	**0.18**
75b	690-36	4.5600E-04	1.0250E-05	15.002	0.094	15.949	0.100	0.0127	0.0007	0.0032	0.0005	0.002	1.71E-16	94.15	**12.30**	**0.15**
75b	690-37	4.5600E-04	1.0250E-05	14.481	0.295	16.546	0.197	0.0133	0.0020	0.0069	0.0019	0.002	5.11E-17	87.60	**11.87**	**0.48**
75b	690-38	4.5600E-04	1.0250E-05	15.289	0.073	16.195	0.088	0.0128	0.0006	0.0030	0.0004	0.002	2.73E-16	94.50	**12.53**	**0.12**
75b	690-39	4.5600E-04	1.0250E-05	16.857	0.159	18.796	0.145	0.0134	0.0011	0.0065	0.0010	0.002	9.96E-17	89.76	**13.81**	**0.26**
75b	690-40	4.5600E-04	1.0250E-05	17.011	0.061	18.628	0.072	0.0137	0.0005	0.0054	0.0003	0.002	3.19E-16	91.39	**13.94**	**0.10**

75b	690-41	4.5600E-04	1.0250E-05	30.733	0.079	31.697	0.131	0.0121	0.0005	0.0032	0.0003	0.002	2.91E-16	97.01	**25.11**	**0.13**
75b	690-42	4.5600E-04	1.0250E-05	15.709	0.194	18.396	0.170	0.0143	0.0013	0.0090	0.0012	0.002	8.09E-17	85.47	**12.88**	**0.32**
75b	690-43	4.5600E-04	1.0250E-05	15.327	0.312	20.571	0.221	0.0164	0.0020	0.0177	0.0020	0.002	5.22E-17	74.56	**12.56**	**0.51**
75b	690-44	4.5600E-04	1.0250E-05	79.589	0.531	79.965	0.894	0.0149	0.0019	0.0012	0.0020	0.002	4.35E-17	99.55	**64.31**	**0.84**
75b	690-45	4.5600E-04	1.0250E-05	16.535	0.299	17.829	0.214	0.0107	0.0019	0.0043	0.0019	0.002	4.38E-17	92.83	**13.55**	**0.49**
75b	690-46	4.5600E-04	1.0250E-05	28.449	0.084	29.621	0.158	0.0126	0.0003	0.0039	0.0002	0.002	5.67E-16	96.09	**23.25**	**0.14**
75b	690-47	4.5600E-04	1.0250E-05	16.191	0.323	17.633	0.215	0.0127	0.0021	0.0048	0.0021	0.002	4.10E-17	91.90	**13.27**	**0.53**
75b	690-48	4.5600E-04	1.0250E-05	25.464	0.234	26.746	0.253	0.0122	0.0014	0.0043	0.0014	0.002	6.93E-17	95.26	**20.83**	**0.38**
75b	690-49	4.5600E-04	1.0250E-05	18.021	0.075	18.400	0.097	0.0134	0.0006	0.0012	0.0004	0.002	2.22E-16	98.02	**14.76**	**0.12**
75b	690-50	4.5600E-04	1.0250E-05	16.895	0.071	19.425	0.089	0.0135	0.0006	0.0085	0.0004	0.002	2.84E-16	87.04	**13.84**	**0.12**
75b	690-51	4.5600E-04	1.0250E-05	18.122	0.194	22.270	0.380	0.0142	0.0003	0.0140	0.0003	0.002	5.80E-16	81.43	**14.85**	**0.32**
75b	690-52	4.5600E-04	1.0250E-05	22.696	0.066	23.011	0.099	0.0107	0.0005	0.0010	0.0003	0.002	2.80E-16	98.70	**18.57**	**0.11**
75b	690-53	4.5600E-04	1.0250E-05	86.540	0.244	88.376	0.481	0.0127	0.0006	0.0062	0.0004	0.002	3.18E-16	97.94	**69.82**	**0.39**
75b	690-54	4.5600E-04	1.0250E-05	30.811	0.158	31.233	0.216	0.0110	0.0011	0.0014	0.0008	0.002	1.03E-16	98.70	**25.17**	**0.26**
75b	690-55	4.5600E-04	1.0250E-05	49.275	0.216	50.724	0.380	0.0120	0.0009	0.0049	0.0008	0.002	1.18E-16	97.17	**40.09**	**0.35**
75b	690-56	4.5600E-04	1.0250E-05	289.935	0.838	291.896	1.680	0.0122	0.0005	0.0066	0.0003	0.002	3.63E-16	99.33	**224.00**	**1.22**
75b	690-57	4.5600E-04	1.0250E-05	17.097	0.245	23.966	0.247	0.0165	0.0016	0.0232	0.0015	0.002	7.45E-17	71.38	**14.01**	**0.40**
75b	690-58	4.5600E-04	1.0250E-05	45.753	0.166	46.439	0.284	0.0126	0.0008	0.0023	0.0006	0.002	1.61E-16	98.56	**37.25**	**0.27**
75b	690-59	4.5600E-04	1.0250E-05	17.556	0.056	18.566	0.101	0.0123	0.0003	0.0034	0.0002	0.002	7.65E-16	94.64	**14.38**	**0.09**
75b	690-60	4.5600E-04	1.0250E-05	39.857	0.500	41.420	0.642	0.0111	0.0026	0.0052	0.0027	0.002	3.15E-17	96.26	**32.49**	**0.81**
75b	690-61	4.5600E-04	1.0250E-05	22.745	0.067	24.383	0.104	0.0134	0.0005	0.0055	0.0003	0.002	3.69E-16	93.34	**18.61**	**0.11**
75b	690-62	4.5600E-04	1.0250E-05	1563.574	5.759	1564.081	11.519	0.0122	0.0009	0.0017	0.0007	0.002	1.33E-16	99.97	**970.98**	**5.53**
75b	690-63	4.5600E-04	1.0250E-05	15.650	0.071	16.711	0.081	0.0122	0.0005	0.0035	0.0004	0.002	2.57E-16	93.74	**12.83**	**0.12**
75b	690-64	4.5600E-04	1.0250E-05	15.392	0.041	16.214	0.055	0.0127	0.0004	0.0027	0.0002	0.002	5.09E-16	95.02	**12.62**	**0.07**
75b	690-65	4.5600E-04	1.0250E-05	18.220	0.044	18.972	0.068	0.0126	0.0004	0.0025	0.0002	0.002	5.11E-16	96.12	**14.93**	**0.07**
75b	690-66	4.5600E-04	1.0250E-05	26.186	0.283	27.343	0.329	0.0143	0.0017	0.0039	0.0016	0.002	5.47E-17	95.82	**21.41**	**0.46**
75b	690-67	4.5600E-04	1.0250E-05	15.156	0.084	16.541	0.080	0.0139	0.0006	0.0046	0.0005	0.002	2.16E-16	91.71	**12.42**	**0.14**
75b	690-68	4.5600E-04	1.0250E-05	16.605	0.105	19.844	0.125	0.0141	0.0007	0.0109	0.0006	0.002	2.11E-16	83.74	**13.61**	**0.17**
75b	690-69	4.5600E-04	1.0250E-05	19.164	0.247	21.549	0.199	0.0152	0.0014	0.0080	0.0016	0.002	6.28E-17	89.00	**15.70**	**0.40**
75b	690-70	4.5600E-04	1.0250E-05	29.012	0.106	29.825	0.170	0.0129	0.0006	0.0027	0.0004	0.002	2.18E-16	97.33	**23.71**	**0.17**
75b	690-71	4.5600E-04	1.0250E-05	16.095	0.085	18.009	0.091	0.0132	0.0007	0.0064	0.0005	0.002	2.20E-16	89.45	**13.19**	**0.14**
75b	690-72	4.5600E-04	1.0250E-05	11.426	0.074	11.676	0.067	0.0123	0.0007	0.0008	0.0005	0.002	1.95E-16	97.99	**9.37**	**0.12**
75b	690-73	4.5600E-04	1.0250E-05	14.637	0.225	15.716	0.145	0.0127	0.0014	0.0036	0.0015	0.002	7.33E-17	93.23	**12.00**	**0.37**
75b	690-74	4.5600E-04	1.0250E-05	25.203	0.261	26.578	0.248	0.0139	0.0014	0.0046	0.0016	0.002	6.00E-17	94.88	**20.61**	**0.42**
75b	690-75	4.5600E-04	1.0250E-05	22.867	0.070	23.399	0.105	0.0127	0.0005	0.0017	0.0003	0.002	3.04E-16	97.79	**18.71**	**0.11**
75b	690-76	4.5600E-04	1.0250E-05	29.240	0.505	29.835	0.444	0.0134	0.0031	0.0020	0.0031	0.002	2.91E-17	98.06	**23.89**	**0.82**
75b	690-77	4.5600E-04	1.0250E-05	29.935	0.074	30.610	0.143	0.0120	0.0002	0.0022	0.0001	0.002	8.69E-16	97.84	**24.46**	**0.12**
75b	690-78	4.5600E-04	1.0250E-05	40.018	0.352	41.186	0.437	0.0125	0.0021	0.0039	0.0019	0.002	5.10E-17	97.20	**32.62**	**0.57**
75b	690-79	4.5600E-04	1.0250E-05	23.858	0.759	26.331	0.563	0.0132	0.0044	0.0083	0.0048	0.002	1.92E-17	90.66	**19.52**	**1.24**
75b	690-80	4.5600E-04	1.0250E-05	26.786	0.064	27.626	0.109	0.0125	0.0004	0.0028	0.0002	0.002	4.24E-16	97.02	**21.90**	**0.10**
75b	690-81	4.5600E-04	1.0250E-05	47.795	0.181	48.554	0.303	0.0114	0.0008	0.0025	0.0007	0.002	1.37E-16	98.47	**38.89**	**0.29**
75b	690-82	4.5600E-04	1.0250E-05	13.834	0.076	14.667	0.075	0.0116	0.0007	0.0028	0.0005	0.002	2.09E-16	94.42	**11.34**	**0.12**
75b	690-83	4.5600E-04	1.0250E-05	23.452	0.176	24.187	0.201	0.0124	0.0010	0.0024	0.0010	0.002	1.04E-16	97.02	**19.19**	**0.29**
75b	690-84	4.5600E-04	1.0250E-05	24.458	0.062	26.194	0.099	0.0127	0.0004	0.0058	0.0003	0.002	4.33E-16	93.43	**20.01**	**0.10**
75b	690-85	4.5600E-04	1.0250E-05	19.027	0.052	20.679	0.070	0.0130	0.0004	0.0055	0.0003	0.002	4.53E-16	92.08	**15.58**	**0.09**
75b	690-86	4.5600E-04	1.0250E-05	29.712	0.139	30.751	0.201	0.0116	0.0009	0.0035	0.0007	0.002	1.46E-16	96.67	**24.28**	**0.23**
75b	690-87	4.5600E-04	1.0250E-05	50.957	0.482	52.431	0.957	0.0134	0.0005	0.0049	0.0004	0.002	2.51E-16	97.22	**41.44**	**0.77**
75b	690-88	4.5600E-04	1.0250E-05	16.840	0.099	17.424	0.104	0.0115	0.0007	0.0019	0.0006	0.002	1.79E-16	96.73	**13.80**	**0.16**
75b	690-89	4.5600E-04	1.0250E-05	89.888	0.312	92.190	0.603	0.0135	0.0007	0.0077	0.0006	0.002	1.90E-16	97.52	**72.47**	**0.49**
75b	690-90	4.5600E-04	1.0250E-05	17.830	0.219	21.308	0.196	0.0142	0.0014	0.0117	0.0014	0.002	7.35E-17	83.74	**14.61**	**0.36**
75b	690-91	4.5600E-04	1.0250E-05	27.208	0.079	27.973	0.125	0.0123	0.0006	0.0025	0.0003	0.002	3.06E-16	97.32	**22.24**	**0.13**
75b	690-92	4.5600E-04	1.0250E-05	14.043	0.079	14.466	0.084	0.0122	0.0007	0.0014	0.0005	0.002	2.00E-16	97.18	**11.51**	**0.13**
75b	690-93	4.5600E-04	1.0250E-05	25.006	0.463	26.015	0.429	0.0109	0.0026	0.0034	0.0028	0.002	3.35E-17	96.18	**20.45**	**0.75**
75b	690-94	4.5600E-04	1.0250E-05	8.433	0.253	9.659	0.114	0.0127	0.0016	0.0041	0.0017	0.002	5.90E-17	87.45	**6.92**	**0.42**
75b	690-95	4.5600E-04	1.0250E-05	20.815	0.500	27.728	0.407	0.0167	0.0027	0.0234	0.0032	0.002	3.51E-17	75.11	**17.04**	**0.81**

Upper Siwalik

DTC3	695-01	4.7550E-04	1.0479E-05	20.625	0.142	23.444	0.149	0.0139	0.0009	0.0095	0.0008	0.002	1.50E-16	88.04	**17.61**	**0.24**
DTC3	695-02	4.7550E-04	1.0479E-05	17.892	0.057	18.548	0.075	0.0122	0.0005	0.0022	0.0003	0.002	4.00E-16	96.55	**15.28**	**0.10**
DTC3	695-03	4.7550E-04	1.0479E-05	17.187	0.073	17.725	0.089	0.0120	0.0006	0.0018	0.0004	0.002	2.66E-16	97.05	**14.68**	**0.13**
DTC3	695-04	4.7550E-04	1.0479E-05	19.494	0.058	20.050	0.083	0.0125	0.0004	0.0018	0.0003	0.002	4.19E-16	97.30	**16.65**	**0.10**
DTC3	695-05	4.7550E-04	1.0479E-05	18.612	0.113	20.398	0.114	0.0119	0.0007	0.0060	0.0007	0.002	1.88E-16	91.31	**15.90**	**0.19**
DTC3	695-06	4.7550E-04	1.0479E-05	45.713	0.155	46.263	0.259	0.0121	0.0008	0.0018	0.0006	0.002	1.88E-16	98.84	**38.79**	**0.26**
DTC3	695-07	4.7550E-04	1.0479E-05	22.532	0.071	22.843	0.097	0.0115	0.0006	0.0010	0.0004	0.002	3.19E-16	98.71	**19.23**	**0.12**
DTC3	695-08	4.7550E-04	1.0479E-05	26.513	0.082	27.524	0.119	0.0128	0.0005	0.0034	0.0004	0.002	3.07E-16	96.38	**22.60**	**0.14**
DTC3	695-09	4.7550E-04	1.0479E-05	28.362	0.086	29.074	0.132	0.0122	0.0005	0.0024	0.0004	0.002	3.11E-16	97.60	**24.17**	**0.15**
DTC3	695-10	4.7550E-04	1.0479E-05	33.418	0.586	35.466	0.525	0.0076	0.0027	0.0069	0.0036	0.001	3.09E-17	94.27	**28.44**	**0.99**
DTC3	695-11	4.7550E-04	1.0479E-05	30.356	0.095	32.789	0.130	0.0131	0.0006	0.0082	0.0005	0.002	2.92E-16	92.62	**25.86**	**0.16**
DTC3	695-12	4.7550E-04	1.0479E-05	28.178	0.112	29.722	0.166	0.0123	0.0006	0.0052	0.0005	0.002	2.40E-16	94.85	**24.01**	**0.19**
DTC3	695-13	4.7550E-04	1.0479E-05	18.810	0.061	19.628	0.079	0.0121	0.0005	0.0027	0.0003	0.002	3.62E-16	95.91	**16.06**	**0.10**
DTC3	695-14	4.7550E-04	1.0479E-05	3.741	0.198	5.665	0.066	0.0128	0.0012	0.0065	0.0013	0.002	8.70E-17	66.22	**3.21**	**0.34**
DTC3	695-15	4.7550E-04	1.0479E-05	3.723	0.230	8.669	0.085	0.0155	0.0013	0.0167	0.0016	0.002	7.77E-17	43.03	**3.19**	**0.39**
DTC3	695-16	4.7550E-04	1.0479E-05	5.311	0.206	8.137	0.070	0.0147	0.0011	0.0095	0.0014	0.002	8.50E-17	65.40	**4.55**	**0.35**
DTC3	695-17	4.7550E-04	1.0479E-05	19.401	0.162	21.311	0.156	0.0127	0.0011	0.0064	0.0010	0.002	1.17E-16	91.10	**16.57**	**0.28**
DTC3	695-18	4.7550E-04	1.0479E-05	25.833	0.146	26.281	0.174	0.0125	0.0009	0.0015	0.0008	0.002	1.38E-16	98.35	**22.03**	**0.25**
DTC3	695-19	4.7550E-04	1.0479E-05	9.924	0.149	11.576	0.098	0.0134	0.0011	0.0055	0.0010	0.002	1.14E-16	85.85	**8.49**	**0.26**
DTC3	695-20	4.7550E-04	1.0479E-05	26.670	0.074	27.040	0.130	0.0116	0.0005	0.0012	0.0002	0.002	4.34E-16	98.69	**22.74**	**0.12**
DTC3	695-21	4.7550E-04	1.0479E-05	19.690	0.258	20.103	0.214	0.0112	0.0015	0.0013	0.0016	0.002	6.79E-17	98.02	**16.81**	**0.44**
DTC3	695-22	4.7550E-04	1.0479E-05	26.396	0.100	27.456	0.146	0.0120	0.0007	0.0035	0.0005	0.002	2.25E-16	96.19	**22.50**	**0.17**
DTC3	695-23	4.7550E-04	1.0479E-05	18.594	0.093	19.805	0.108	0.0123	0.0007	0.0041	0.0005	0.002	2.05E-16	93.96	**15.88**	**0.16**
DTC3	695-24	4.7550E-04	1.0479E-05	192.252	0.500	193.455	0.993	0.0124	0.0006	0.0040	0.0005	0.002	2.47E-16	99.39	**157.82**	**0.79**
DTC3	695-25	4.7550E-04	1.0479E-05	237.138	0.955	239.582	1.903	0.0136	0.0011	0.0082	0.0010	0.002	1.25E-16	98.99	**192.76**	**1.47**
DTC3	695-26	4.7550E-04	1.0479E-05	27.531	0.113	29.746	0.157	0.0137	0.0007	0.0074	0.0006	0.002	2.14E-16	92.60	**23.46**	**0.19**
DTC3	695-27	4.7550E-04	1.0479E-05	25.788	0.256	27.245	0.251	0.0136	0.0015	0.0049	0.0015	0.002	7.39E-17	94.71	**21.99**	**0.43**
DTC3	695-28	4.7550E-04	1.0479E-05	20.453	0.093	22.720	0.102	0.0140	0.0006	0.0076	0.0005	0.002	2.52E-16	90.08	**17.46**	**0.16**
DTC3	695-29	4.7550E-04	1.0479E-05	19.540	0.070	21.389	0.092	0.0136	0.0005	0.0062	0.0004	0.002	3.74E-16	91.42	**16.69**	**0.12**
DTC3	695-30	4.7550E-04	1.0479E-05	21.794	0.080	23.974	0.107	0.0137	0.0006	0.0073	0.0004	0.002	3.29E-16	90.96	**18.60**	**0.14**
DTC3	695-31	4.7550E-04	1.0479E-05	24.192	0.080	24.436	0.112	0.0119	0.0005	0.0008	0.0004	0.002	3.02E-16	99.06	**20.63**	**0.13**
DTC3	695-32	4.7550E-04	1.0479E-05	26.074	0.112	27.405	0.153	0.0131	0.0007	0.0045	0.0006	0.002	2.13E-16	95.19	**22.23**	**0.19**
DTC3	695-33	4.7550E-04	1.0479E-05	28.008	0.110	29.955	0.149	0.0134	0.0007	0.0065	0.0006	0.002	2.30E-16	93.55	**23.87**	**0.19**
DTC3	695-34	4.7550E-04	1.0479E-05	26.759	0.175	29.599	0.194	0.0135	0.0010	0.0096	0.0010	0.002	1.34E-16	90.45	**22.81**	**0.30**
DTC3	695-35	4.7550E-04	1.0479E-05	5.637	0.149	10.572	0.076	0.0148	0.0010	0.0167	0.0010	0.002	1.40E-16	53.40	**4.83**	**0.25**
DTC3	695-36	4.7550E-04	1.0479E-05	19.338	0.075	20.552	0.100	0.0122	0.0005	0.0041	0.0004	0.002	3.55E-16	94.16	**16.51**	**0.13**
DTC3	695-37	4.7550E-04	1.0479E-05	12.623	0.074	13.224	0.061	0.0114	0.0006	0.0020	0.0005	0.002	2.67E-16	95.57	**10.80**	**0.13**
DTC3	695-38	4.7550E-04	1.0479E-05	4.577	0.124	5.850	0.043	0.0124	0.0008	0.0043	0.0008	0.002	1.48E-16	78.44	**3.92**	**0.21**
DTC3	695-39	4.7550E-04	1.0479E-05	26.930	0.259	27.741	0.255	0.0108	0.0014	0.0027	0.0015	0.002	7.80E-17	97.13	**22.96**	**0.44**
DTC3	695-40	4.7550E-04	1.0479E-05	19.980	0.099	21.152	0.115	0.0132	0.0007	0.0039	0.0006	0.002	2.32E-16	94.53	**17.06**	**0.17**
DTC3	695-41	4.7550E-04	1.0479E-05	25.733	0.421	26.993	0.372	0.0126	0.0021	0.0042	0.0026	0.002	4.33E-17	95.39	**21.94**	**0.71**
DTC3	695-42	4.7550E-04	1.0479E-05	19.075	0.133	20.447	0.134	0.0124	0.0008	0.0046	0.0008	0.002	1.63E-16	93.36	**16.29**	**0.23**
DTC3	695-43	4.7550E-04	1.0479E-05	19.991	0.096	25.157	0.127	0.0151	0.0006	0.0174	0.0006	0.002	2.99E-16	79.51	**17.07**	**0.16**
DTC3	695-44	4.7550E-04	1.0479E-05	27.355	0.107	28.361	0.155	0.0123	0.0006	0.0034	0.0005	0.002	2.52E-16	96.51	**23.32**	**0.18**
DTC3	695-45	4.7550E-04	1.0479E-05	18.903	0.103	21.281	0.116	0.0136	0.0007	0.0080	0.0006	0.002	2.31E-16	88.89	**16.14**	**0.18**
DTC3	695-46	4.7550E-04	1.0479E-05	21.618	0.270	24.998	0.236	0.0133	0.0015	0.0114	0.0017	0.002	6.87E-17	86.53	**18.45**	**0.46**
DTC3	695-47	4.7550E-04	1.0479E-05	21.592	0.227	25.352	0.221	0.0133	0.0013	0.0127	0.0014	0.002	8.92E-17	85.22	**18.43**	**0.39**
DTC3	695-48	4.7550E-04	1.0479E-05	19.175	0.157	20.073	0.145	0.0139	0.0010	0.0030	0.0010	0.002	1.21E-16	95.60	**16.37**	**0.27**
DTC3	695-49	4.7550E-04	1.0479E-05	19.754	0.150	20.874	0.148	0.0119	0.0010	0.0037	0.0009	0.002	1.38E-16	94.71	**16.87**	**0.25**
DTC3	695-50	4.7550E-04	1.0479E-05	22.125	0.090	26.622	0.115	0.0148	0.0006	0.0152	0.0005	0.002	3.24E-16	83.16	**18.88**	**0.15**
DTC3	695-51	4.7550E-04	1.0479E-05	21.440	0.346	23.398	0.269	0.0131	0.0017	0.0066	0.0022	0.002	5.72E-17	91.69	**18.30**	**0.59**
DTC3	695-52	4.7550E-04	1.0479E-05	25.014	0.057	25.429	0.107	0.0117	0.0003	0.0014	0.0001	0.002	1.03E-15	98.43	**21.33**	**0.10**
DTC3	695-53	4.7550E-04	1.0479E-05	23.805	0.126	24.181	0.147	0.0115	0.0008	0.0012	0.0007	0.002	1.74E-16	98.51	**20.31**	**0.21**
DTC3	695-54	4.7550E-04	1.0479E-05	27.167	0.153	27.987	0.210	0.0119	0.0008	0.0027	0.0008	0.002	1.47E-16	97.12	**23.16**	**0.26**
DTC3	695-55	4.7550E-04	1.0479E-05	18.797	0.095	19.814	0.113	0.0126	0.0007	0.0034	0.0005	0.002	2.20E-16	94.94	**16.05**	**0.16**

DTC3	695-56	4.7550E-04	1.0479E-05	4.970	0.055	5.796	0.029	0.0129	0.0005	0.0027	0.0004	0.002	3.32E-16	85.98	**4.26**	**0.09**
DTC3	695-57	4.7550E-04	1.0479E-05	29.360	0.088	30.310	0.160	0.0126	0.0004	0.0032	0.0003	0.002	4.48E-16	96.91	**25.01**	**0.15**
DTC3	695-58	4.7550E-04	1.0479E-05	78.904	0.248	79.485	0.485	0.0127	0.0005	0.0019	0.0004	0.002	2.70E-16	99.29	**66.45**	**0.41**
DTC3	695-59	4.7550E-04	1.0479E-05	20.044	0.063	20.954	0.090	0.0127	0.0006	0.0030	0.0003	0.002	4.17E-16	95.73	**17.11**	**0.11**
DTC3	695-60	4.7550E-04	1.0479E-05	18.886	0.218	24.721	0.220	0.0146	0.0012	0.0197	0.0014	0.002	1.03E-16	76.45	**16.13**	**0.37**
Himalayan tributaries																
YAMNE	242-50	2.07E-04	1.23E-06	84.386	0.535	89.091	0.55	0.0162	0.0005	0.0158	0.0004	0.002	4.28E-16	94.7	**31.22**	**0.2**
YAMNE	242-51	2.07E-04	1.23E-06	76.437	0.323	77.396	0.314	0.0139	0.0005	0.0032	0.0003	0.002	3.83E-16	98.8	**28.3**	**0.12**
YAMNE	242-52	2.07E-04	1.23E-06	75.863	0.43	84.362	0.408	0.0178	0.0006	0.0287	0.0007	0.002	2.60E-16	90	**28.09**	**0.16**
YAMNE	242-53	2.07E-04	1.23E-06	73.532	0.31	79.089	0.307	0.0162	0.0004	0.0187	0.0004	0.002	5.15E-16	93	**27.23**	**0.11**
YAMNE	242-54	2.07E-04	1.23E-06	74.484	0.3	77.784	0.288	0.0146	0.0004	0.0111	0.0004	0.002	4.30E-16	95.8	**27.58**	**0.11**
YAMNE	242-55	2.07E-04	1.23E-06	75.451	0.253	88.181	0.252	0.0205	0.0003	0.043	0.0003	0.002	9.56E-16	85.6	**27.94**	**0.09**
YAMNE	242-56	2.07E-04	1.23E-06	68.609	0.341	76.45	0.319	0.0175	0.0005	0.0265	0.0006	0.002	4.06E-16	89.8	**25.42**	**0.13**
YAMNE	242-57	2.07E-04	1.23E-06	74.23	0.637	78.214	0.583	0.0147	0.001	0.0134	0.0011	0.002	1.17E-16	94.9	**27.49**	**0.23**
YAMNE	242-58	2.07E-04	1.23E-06	75.324	0.239	79.727	0.236	0.0155	0.0003	0.0148	0.0002	0.002	7.52E-16	94.5	**27.89**	**0.09**
YAMNE	242-59	2.07E-04	1.23E-06	73.129	0.268	74.208	0.264	0.0129	0.0003	0.0036	0.0002	0.002	5.38E-16	98.6	**27.08**	**0.1**
YAMNE	242-60	2.07E-04	1.23E-06	77.761	0.463	79.678	0.43	0.013	0.0006	0.0064	0.0006	0.002	2.10E-16	97.6	**28.79**	**0.17**
YAMNE	242-61	2.07E-04	1.23E-06	70.238	0.271	72.064	0.257	0.014	0.0005	0.0061	0.0003	0.002	4.05E-16	97.5	**26.02**	**0.1**
YAMNE	242-62	2.07E-04	1.23E-06	85.934	0.378	89.823	0.375	0.0175	0.0005	0.0131	0.0004	0.003	4.17E-16	95.7	**31.79**	**0.14**
YAMNE	242-63	2.07E-04	1.23E-06	70.687	0.333	73.468	0.321	0.0147	0.0005	0.0093	0.0004	0.002	3.04E-16	96.3	**26.19**	**0.12**
YAMNE	242-64	2.07E-04	1.23E-06	74.589	0.475	78.872	0.449	0.0149	0.0007	0.0144	0.0007	0.002	1.83E-16	94.6	**27.62**	**0.17**
YAMNE	242-65	2.07E-04	1.23E-06	73.885	0.231	75.498	0.222	0.0141	0.0004	0.0054	0.0002	0.002	5.40E-16	97.9	**27.36**	**0.08**
YAMNE	242-66	2.07E-04	1.23E-06	81.985	0.331	83.602	0.317	0.0133	0.0005	0.0054	0.0004	0.002	3.66E-16	98.1	**30.34**	**0.12**
YAMNE	242-67	2.07E-04	1.23E-06	90.262	0.317	92.827	0.307	0.0155	0.0004	0.0086	0.0003	0.002	5.03E-16	97.3	**33.37**	**0.12**
YAMNE	242-68	2.07E-04	1.23E-06	93.781	0.581	94.744	0.558	0.0174	0.0008	0.0032	0.0006	0.003	1.67E-16	99	**34.66**	**0.21**
YAMNE	242-69	2.07E-04	1.23E-06	88.53	0.258	90.374	0.249	0.0153	0.0003	0.0062	0.0003	0.002	7.45E-16	98	**32.74**	**0.09**
YAMNE	242-70	2.07E-04	1.23E-06	84.647	0.302	86.696	0.296	0.0146	0.0004	0.0069	0.0003	0.002	5.16E-16	97.7	**31.31**	**0.11**
YAMNE	242-71	2.07E-04	1.23E-06	82.585	0.256	89.121	0.254	0.0163	0.0003	0.022	0.0003	0.002	9.37E-16	92.7	**30.56**	**0.09**
YAMNE	242-72	2.07E-04	1.23E-06	78.843	0.447	83.104	0.421	0.0146	0.0007	0.0143	0.0006	0.002	2.13E-16	94.9	**29.18**	**0.16**
YAMNE	242-73	2.07E-04	1.23E-06	74.974	0.288	77.13	0.282	0.0137	0.0004	0.0072	0.0003	0.002	4.76E-16	97.2	**27.76**	**0.11**
YAMNE	242-74	2.07E-04	1.23E-06	74.668	0.287	75.528	0.28	0.0138	0.0003	0.0028	0.0002	0.002	4.98E-16	98.9	**27.65**	**0.11**
YAMNE	242-75	2.07E-04	1.23E-06	75.922	0.476	78.56	0.452	0.0139	0.0007	0.0088	0.0006	0.002	1.92E-16	96.7	**28.11**	**0.17**
YAMNE	242-76	2.07E-04	1.23E-06	75.517	0.227	78.599	0.225	0.0142	0.0003	0.0103	0.0002	0.002	1.04E-15	96.1	**27.96**	**0.08**
YAMNE	242-77	2.07E-04	1.23E-06	78.118	0.227	82.8	0.222	0.0152	0.0003	0.0158	0.0002	0.002	9.58E-16	94.4	**28.92**	**0.08**
YAMNE	242-78	2.07E-04	1.23E-06	81.173	0.623	89.494	0.57	0.0219	0.001	0.0281	0.0011	0.003	1.41E-16	90.7	**30.04**	**0.23**
YAMNE	242-79	2.07E-04	1.23E-06	83.694	0.395	88.268	0.385	0.0157	0.0005	0.0154	0.0005	0.002	3.19E-16	94.8	**30.96**	**0.14**
YAMNE	242-80	2.07E-04	1.23E-06	77.851	0.282	85.812	0.277	0.0177	0.0004	0.0269	0.0004	0.002	7.34E-16	90.8	**28.82**	**0.1**
YAMNE	242-81	2.07E-04	1.23E-06	105.472	0.277	108.291	0.277	0.0172	0.0002	0.0095	0.0002	0.003	1.31E-15	97.4	**38.93**	**0.1**
YAMNE	242-82	2.07E-04	1.23E-06	76.152	0.228	78.663	0.223	0.0142	0.0003	0.0084	0.0002	0.002	8.41E-16	96.8	**28.2**	**0.08**
YAMNE	242-83	2.07E-04	1.23E-06	71.956	0.357	75.175	0.332	0.0144	0.0006	0.0108	0.0005	0.002	2.68E-16	95.8	**26.65**	**0.13**
YAMNE	242-84	2.07E-04	1.23E-06	87.7	0.294	90.318	0.275	0.015	0.0004	0.0088	0.0004	0.002	5.57E-16	97.1	**32.43**	**0.11**
YAMNE	242-85	2.07E-04	1.23E-06	81.251	0.236	83.143	0.232	0.014	0.0003	0.0063	0.0002	0.002	7.70E-16	97.8	**30.07**	**0.09**
YAMNE	242-86	2.07E-04	1.23E-06	82.59	0.297	83.439	0.286	0.013	0.0003	0.0028	0.0003	0.002	5.86E-16	99	**30.56**	**0.11**
YAMNE	242-87	2.07E-04	1.23E-06	72.677	0.265	77.483	0.248	0.0155	0.0004	0.0162	0.0004	0.002	6.33E-16	93.8	**26.92**	**0.1**
YAMNE	242-88	2.07E-04	1.23E-06	73.958	0.192	76.684	0.19	0.0222	0.0002	0.0092	0.0002	0.003	1.33E-15	96.5	**27.39**	**0.07**
YAMNE	242-89	2.07E-04	1.23E-06	70.448	0.212	73.07	0.21	0.015	0.0003	0.0088	0.0002	0.002	1.03E-15	96.4	**26.1**	**0.08**
YAMNE	242-90	2.07E-04	1.23E-06	80.864	0.235	84.183	0.234	0.0145	0.0002	0.0112	0.0002	0.002	1.16E-15	96.1	**29.93**	**0.09**
YAMNE	242-91	2.07E-04	1.23E-06	74.857	0.232	75.45	0.23	0.0132	0.0002	0.0019	0.0001	0.002	1.18E-15	99.3	**27.72**	**0.09**
YAMNE	242-92	2.07E-04	1.23E-06	733.591	173.529	12969.87	2553.664	8.3248	1.6506	41.4092	8.1582	0.094	1.30E-18	5.7	**254.86**	**56.22**
YAMNE	242-93	2.07E-04	1.23E-06	80.754	0.246	83.791	0.243	0.0152	0.0003	0.0102	0.0002	0.002	1.21E-15	96.4	**29.88**	**0.09**
YAMNE	242-94	2.07E-04	1.23E-06	80.661	0.243	83.853	0.241	0.0145	0.0002	0.0107	0.0002	0.002	1.25E-15	96.2	**29.85**	**0.09**
YAMNE	242-95	2.07E-04	1.23E-06	82.999	0.398	85.43	0.386	0.0162	0.0005	0.0081	0.0004	0.002	3.42E-16	97.2	**30.71**	**0.15**
YAMNE	242-96	2.07E-04	1.23E-06	67.084	0.188	70.053	0.186	0.0157	0.0002	0.01	0.0001	0.002	2.18E-15	95.8	**24.86**	**0.07**
YAMNE	242-97	2.07E-04	1.23E-06	73.019	0.229	74.784	0.226	0.0138	0.0002	0.0059	0.0002	0.002	1.10E-15	97.7	**27.04**	**0.08**
YAMNE	242-98	2.07E-04	1.23E-06	82.096	0.297	85.989	0.291	0.0148	0.0004	0.0131	0.0003	0.002	6.12E-16	95.5	**30.38**	**0.11**

YAMNE	242-99	2.07E-04	1.23E-06	81.548	0.215	85.135	0.213	0.015	0.0002	0.0121	0.0001	0.002	1.77E-15	95.8	**30.18**	**0.08**
YANG SANG	232-01	2.04E-04	1.16E-06	74.307	0.228	77.663	0.222	0.0152	0.0003	0.0113	0.0002	0.002	9.43E-16	95.7	**27.16**	**0.08**
YANG SANG	232-02	2.04E-04	1.16E-06	76.265	0.235	77.821	0.23	0.014	0.0003	0.0052	0.0002	0.002	9.38E-16	98	**27.87**	**0.09**
YANG SANG	232-03	2.04E-04	1.16E-06	125.877	0.318	130.455	0.319	0.015	0.0002	0.0154	0.0002	0.002	1.79E-15	96.5	**45.78**	**0.11**
YANG SANG	232-04	2.04E-04	1.16E-06	124.53	0.39	128.281	0.389	0.0147	0.0003	0.0126	0.0003	0.002	7.49E-16	97.1	**45.3**	**0.14**
YANG SANG	232-05	2.04E-04	1.16E-06	79.018	0.229	96.156	0.227	0.0233	0.0003	0.0579	0.0003	0.002	1.56E-15	82.2	**28.87**	**0.08**
YANG SANG	232-06	2.04E-04	1.16E-06	85.509	0.267	88.589	0.262	0.0223	0.0004	0.0104	0.0003	0.003	6.91E-16	96.6	**31.22**	**0.1**
YANG SANG	232-07	2.04E-04	1.16E-06	110.324	0.305	118.744	0.305	0.0179	0.0003	0.0284	0.0003	0.002	1.25E-15	92.9	**40.19**	**0.11**
YANG SANG	232-08	2.04E-04	1.16E-06	76.701	0.269	82.361	0.264	0.0163	0.0003	0.0191	0.0003	0.002	7.58E-16	93.2	**28.03**	**0.1**
YANG SANG	232-09	2.04E-04	1.16E-06	85.839	0.347	88.292	0.332	0.014	0.0005	0.0082	0.0004	0.002	3.54E-16	97.3	**31.34**	**0.13**
YANG SANG	232-10	2.04E-04	1.16E-06	82.033	0.276	86.145	0.272	0.015	0.0003	0.0138	0.0003	0.002	7.38E-16	95.3	**29.97**	**0.1**
YANG SANG	232-11	2.04E-04	1.16E-06	102.97	0.264	107.561	0.265	0.015	0.0002	0.0155	0.0002	0.002	2.02E-15	95.8	**37.53**	**0.1**
YANG SANG	232-12	2.04E-04	1.16E-06	117.42	1.161	123.043	1.062	0.0155	0.0014	0.0189	0.0018	0.002	9.03E-17	95.5	**42.74**	**0.42**
YANG SANG	232-13	2.04E-04	1.16E-06	80.59	0.327	82.066	0.31	0.014	0.0004	0.0049	0.0004	0.002	5.91E-16	98.2	**29.44**	**0.12**
YANG SANG	232-14	2.04E-04	1.16E-06	78.203	0.337	78.798	0.315	0.0133	0.0004	0.0019	0.0004	0.002	4.64E-16	99.3	**28.58**	**0.12**
YANG SANG	232-16	2.04E-04	1.16E-06	114.976	0.43	115.257	0.422	0.0123	0.0004	0.0009	0.0003	0.002	6.36E-16	99.8	**41.86**	**0.15**
YANG SANG	232-17	2.04E-04	1.16E-06	76.523	0.339	81.845	0.323	0.0161	0.0005	0.0179	0.0005	0.002	4.10E-16	93.5	**27.97**	**0.12**
YANG SANG	232-18	2.04E-04	1.16E-06	118.039	0.483	125.881	0.481	0.0172	0.0004	0.0265	0.0005	0.002	5.07E-16	93.8	**42.96**	**0.17**
YANG SANG	232-19	2.04E-04	1.16E-06	79.558	0.297	90.074	0.288	0.0191	0.0004	0.0355	0.0004	0.002	8.62E-16	88.4	**29.07**	**0.11**
YANG SANG	232-20	2.04E-04	1.16E-06	77.848	0.41	83.36	0.39	0.0155	0.0006	0.0186	0.0006	0.002	2.86E-16	93.4	**28.45**	**0.15**
YANG SANG	232-21	2.04E-04	1.16E-06	117.5	0.937	126.861	0.923	0.0196	0.001	0.0316	0.0012	0.002	1.22E-16	92.6	**42.77**	**0.34**
YANG SANG	232-22	2.04E-04	1.16E-06	78.954	0.35	86.862	0.34	0.0172	0.0005	0.0267	0.0005	0.002	4.87E-16	90.9	**28.85**	**0.13**
YANG SANG	232-23	2.04E-04	1.16E-06	73.92	0.253	77.371	0.249	0.0148	0.0003	0.0116	0.0002	0.002	7.38E-16	95.6	**27.02**	**0.09**
YANG SANG	232-24	2.04E-04	1.16E-06	82.532	0.399	83.893	0.382	0.0122	0.0005	0.0045	0.0004	0.002	2.87E-16	98.4	**30.15**	**0.14**
YANG SANG	232-25	2.04E-04	1.16E-06	78.725	0.255	81.61	0.248	0.0146	0.0003	0.0097	0.0003	0.002	7.05E-16	96.5	**28.77**	**0.09**
YANG SANG	232-26	2.04E-04	1.16E-06	130.338	0.445	134.51	0.446	0.016	0.0004	0.014	0.0003	0.002	6.65E-16	96.9	**47.38**	**0.16**
YANG SANG	232-27	2.04E-04	1.16E-06	76.994	0.481	79.493	0.436	0.0145	0.0007	0.0084	0.0007	0.002	1.94E-16	96.9	**28.14**	**0.17**
YANG SANG	232-28	2.04E-04	1.16E-06	109.894	0.26	113.695	0.259	0.0149	0.0002	0.0128	0.0002	0.002	1.55E-15	96.7	**40.03**	**0.09**
YANG SANG	232-29	2.04E-04	1.16E-06	133.897	0.446	137.059	0.443	0.0146	0.0004	0.0106	0.0003	0.002	5.12E-16	97.7	**48.66**	**0.16**
YANG SANG	232-30	2.04E-04	1.16E-06	121.422	0.466	131.063	0.469	0.0188	0.0004	0.0325	0.0005	0.002	4.75E-16	92.7	**44.18**	**0.17**
YANG SANG	232-31	2.04E-04	1.16E-06	89.862	0.34	100.36	0.343	0.0187	0.0004	0.0354	0.0004	0.002	5.69E-16	89.6	**32.8**	**0.12**
YANG SANG	232-32	2.04E-04	1.16E-06	79.018	0.315	83.367	0.29	0.0156	0.0004	0.0146	0.0005	0.002	6.58E-16	94.8	**28.87**	**0.11**
YANG SANG	232-33	2.04E-04	1.16E-06	86.374	0.249	95.92	0.246	0.0189	0.0002	0.0322	0.0003	0.002	1.41E-15	90.1	**31.54**	**0.09**
YANG SANG	232-34	2.04E-04	1.16E-06	111.443	0.313	117.48	0.313	0.016	0.0002	0.0203	0.0002	0.002	1.24E-15	94.9	**40.59**	**0.11**
YANG SANG	232-35	2.04E-04	1.16E-06	132.256	0.377	142.731	0.381	0.0189	0.0003	0.0354	0.0003	0.002	1.22E-15	92.7	**48.07**	**0.14**
YANG SANG	232-36	2.04E-04	1.16E-06	114.186	0.532	120.923	0.531	0.0158	0.0005	0.0227	0.0005	0.002	3.08E-16	94.5	**41.58**	**0.19**
YANG SANG	232-37	2.04E-04	1.16E-06	762.524	3.538	763.57	3.54	0.0135	0.0005	0.0035	0.0004	0.002	2.36E-16	99.9	**261.04**	**1.13**
YANG SANG	232-38	2.04E-04	1.16E-06	76.746	0.322	78.115	0.313	0.0133	0.0004	0.0045	0.0003	0.002	3.43E-16	98.3	**28.05**	**0.12**
YANG SANG	232-39	2.04E-04	1.16E-06	76.885	0.468	82.204	0.453	0.0164	0.0007	0.0179	0.0006	0.002	1.94E-16	93.6	**28.1**	**0.17**
YANG SANG	232-40	2.04E-04	1.16E-06	79.25	0.258	89.303	0.252	0.0187	0.0003	0.0339	0.0004	0.002	1.02E-15	88.8	**28.96**	**0.09**
YANG SANG	232-41	2.04E-04	1.16E-06	41.685	1.273	73.991	0.936	0.0312	0.0028	0.1092	0.0041	0.002	3.48E-17	56.4	**15.29**	**0.46**
YANG SANG	232-42	2.04E-04	1.16E-06	73.497	0.288	77.224	0.272	0.0148	0.0004	0.0125	0.0004	0.002	4.91E-16	95.2	**26.87**	**0.1**
YANG SANG	232-43	2.04E-04	1.16E-06	88.949	0.469	98.592	0.457	0.0183	0.0007	0.0325	0.0007	0.002	2.45E-16	90.2	**32.47**	**0.17**
YANG SANG	232-44	2.04E-04	1.16E-06	89.13	0.518	95.836	0.492	0.0173	0.0006	0.0226	0.0008	0.002	2.09E-16	93	**32.54**	**0.19**
YANG SANG	232-45	2.04E-04	1.16E-06	77.679	0.332	86.741	0.313	0.0186	0.0005	0.0306	0.0006	0.002	3.59E-16	89.6	**28.39**	**0.12**
YANG SANG	232-46	2.04E-04	1.16E-06	98.324	0.417	104.91	0.413	0.0211	0.0005	0.0222	0.0005	0.003	3.75E-16	93.7	**35.86**	**0.15**
YANG SANG	232-47	2.04E-04	1.16E-06	89.454	0.896	91.784	0.803	0.0148	0.0013	0.0078	0.0015	0.002	7.87E-17	97.5	**32.65**	**0.32**
YANG SANG	232-48	2.04E-04	1.16E-06	119.036	0.452	122.017	0.415	0.0157	0.0006	0.01	0.0007	0.002	4.23E-16	97.6	**43.32**	**0.16**
YANG SANG	232-49	2.04E-04	1.16E-06	6655.987	171.694	6836.387	175.604	0.1947	0.0113	0.6105	0.0548	0.014	1.25E-17	97.4	**1548.29**	**26.81**
YANG SANG	232-50	2.04E-04	1.16E-06	82.26	0.274	87.626	0.272	0.0163	0.0003	0.0181	0.0003	0.002	6.59E-16	93.9	**30.05**	**0.1**
SIYOM	235-01	1.98E-04	1.21E-06	43.851	0.136	48.573	0.128	0.0156	0.0003	0.0159	0.0002	0.002	1.13E-15	90.3	**15.57**	**0.05**
SIYOM	235-02	1.98E-04	1.21E-06	43.471	0.255	44.045	0.207	0.0138	0.0007	0.0019	0.0005	0.002	1.94E-16	98.8	**15.44**	**0.09**
SIYOM	235-03	1.98E-04	1.21E-06	43.91	0.246	45.096	0.226	0.0133	0.0005	0.0039	0.0004	0.002	3.01E-16	97.4	**15.59**	**0.09**
SIYOM	235-04	1.98E-04	1.21E-06	45.504	1.268	47.36	0.694	0.0109	0.003	0.0062	0.0036	0.002	3.46E-17	96.1	**16.16**	**0.45**

SIYOM	235-05	1.98E-04	1.21E-06	45.311	0.177	45.858	0.162	0.0132	0.0004	0.0018	0.0002	0.002	4.63E-16	98.9	**16.09**	**0.06**
SIYOM	235-06	1.98E-04	1.21E-06	44.773	0.108	46.746	0.102	0.0153	0.0002	0.0066	0.0001	0.002	1.93E-15	95.8	**15.9**	**0.04**
SIYOM	235-07	1.98E-04	1.21E-06	44.768	0.145	48.445	0.134	0.0149	0.0003	0.0124	0.0002	0.002	8.18E-16	92.5	**15.9**	**0.05**
SIYOM	235-08	1.98E-04	1.21E-06	44.301	0.572	68.204	0.491	0.0284	0.0013	0.0808	0.0017	0.002	1.20E-16	65	**15.73**	**0.2**
SIYOM	235-09	1.98E-04	1.21E-06	45.202	0.219	47.987	0.184	0.0144	0.0004	0.0093	0.0004	0.002	4.06E-16	94.3	**16.05**	**0.08**
SIYOM	235-10	1.98E-04	1.21E-06	50.964	0.206	54.036	0.188	0.0155	0.0004	0.0103	0.0003	0.002	5.01E-16	94.4	**18.09**	**0.07**
SIYOM	235-11	1.98E-04	1.21E-06	43.877	0.302	45.011	0.265	0.0136	0.0006	0.0038	0.0005	0.002	2.29E-16	97.5	**15.58**	**0.11**
SIYOM	235-12	1.98E-04	1.21E-06	38.924	0.599	46.388	0.409	0.0151	0.0013	0.0252	0.0017	0.002	7.53E-17	84	**13.83**	**0.21**
SIYOM	235-13	1.98E-04	1.21E-06	44.511	0.208	46.941	0.181	0.0139	0.0004	0.0081	0.0004	0.002	4.51E-16	94.9	**15.81**	**0.07**
SIYOM	235-14	1.98E-04	1.21E-06	48.829	0.304	50.192	0.257	0.0133	0.0007	0.0045	0.0006	0.002	2.05E-16	97.3	**17.33**	**0.11**
SIYOM	235-15	1.98E-04	1.21E-06	45.899	0.341	49.694	0.273	0.0149	0.0008	0.0128	0.0008	0.002	1.73E-16	92.4	**16.3**	**0.12**
SIYOM	235-16	1.98E-04	1.21E-06	44.279	0.216	45.738	0.197	0.0137	0.0005	0.0049	0.0003	0.002	3.81E-16	96.9	**15.72**	**0.08**
SIYOM	235-17	1.98E-04	1.21E-06	49.222	0.312	57.087	0.271	0.0206	0.0007	0.0265	0.0007	0.003	3.16E-16	86.3	**17.47**	**0.11**
SIYOM	235-18	1.98E-04	1.21E-06	57.742	0.594	64.184	0.502	0.0177	0.0012	0.0217	0.0013	0.002	8.95E-17	90	**20.48**	**0.21**
SIYOM	235-19	1.98E-04	1.21E-06	40.401	4.004	46.949	1.652	0.0115	0.0095	0.0221	0.0127	0.001	9.18E-18	86.1	**14.35**	**1.42**
SIYOM	235-20	1.98E-04	1.21E-06	44.909	0.327	47.808	0.289	0.0138	0.0007	0.0097	0.0006	0.002	2.24E-16	94	**15.95**	**0.12**
SIYOM	235-21	1.98E-04	1.21E-06	44.623	0.496	49.457	0.347	0.0167	0.0013	0.0163	0.0013	0.002	9.24E-17	90.3	**15.84**	**0.18**
SIYOM	235-22	1.98E-04	1.21E-06	45.389	0.332	48.886	0.273	0.0146	0.0007	0.0117	0.0007	0.002	1.90E-16	92.9	**16.12**	**0.12**
SIYOM	235-23	1.98E-04	1.21E-06	44.198	0.271	54.419	0.238	0.0192	0.0005	0.0345	0.0006	0.002	3.17E-16	81.3	**15.69**	**0.1**
SIYOM	235-24	1.98E-04	1.21E-06	48.025	0.262	54.114	0.204	0.0203	0.0006	0.0205	0.0006	0.003	3.79E-16	88.8	**17.05**	**0.09**
SIYOM	235-25	1.98E-04	1.21E-06	45.91	0.132	52.444	0.123	0.0181	0.0002	0.022	0.0002	0.002	1.34E-15	87.6	**16.3**	**0.05**
SIYOM	235-26	1.98E-04	1.21E-06	44.686	0.131	50.431	0.122	0.0169	0.0002	0.0194	0.0002	0.002	1.38E-15	88.7	**15.87**	**0.05**
SIYOM	235-27	1.98E-04	1.21E-06	42.982	0.284	44.93	0.223	0.0137	0.0007	0.0065	0.0006	0.002	2.05E-16	95.7	**15.26**	**0.1**
SIYOM	235-28	1.98E-04	1.21E-06	44.606	0.238	46.594	0.215	0.0148	0.0006	0.0066	0.0004	0.002	3.17E-16	95.8	**15.84**	**0.08**
SIYOM	235-29	1.98E-04	1.21E-06	47.045	0.346	55.586	0.307	0.0199	0.0006	0.0288	0.0007	0.002	2.28E-16	84.7	**16.7**	**0.12**
SIYOM	235-30	1.98E-04	1.21E-06	41.879	0.282	42.621	0.23	0.0135	0.0007	0.0024	0.0006	0.002	2.00E-16	98.3	**14.87**	**0.1**
SIYOM	235-31	1.98E-04	1.21E-06	36.65	0.357	57.148	0.305	0.0271	0.0009	0.0693	0.0009	0.002	2.37E-16	64.2	**13.02**	**0.13**
SIYOM	235-32	1.98E-04	1.21E-06	48.33	0.337	54.936	0.274	0.0177	0.0007	0.0223	0.0008	0.002	2.27E-16	88	**17.16**	**0.12**
SIYOM	235-33	1.98E-04	1.21E-06	45.085	0.785	47.72	0.46	0.0159	0.002	0.0088	0.0022	0.002	5.08E-17	94.5	**16.01**	**0.28**
SIYOM	235-34	1.98E-04	1.21E-06	57.912	0.404	59.768	0.372	0.0138	0.0007	0.0062	0.0006	0.002	2.18E-16	96.9	**20.54**	**0.14**
SIYOM	235-35	1.98E-04	1.21E-06	47.95	0.353	50.65	0.313	0.015	0.0006	0.0091	0.0006	0.002	2.22E-16	94.7	**17.02**	**0.12**
SIYOM	235-36	1.98E-04	1.21E-06	42.195	0.372	43.754	0.288	0.013	0.0009	0.0052	0.0008	0.002	1.26E-16	96.5	**14.99**	**0.13**
SIYOM	235-37	1.98E-04	1.21E-06	42.996	0.151	47.169	0.135	0.0151	0.0003	0.014	0.0003	0.002	7.46E-16	91.2	**15.27**	**0.05**
SIYOM	235-38	1.98E-04	1.21E-06	45.136	0.338	52.667	0.292	0.0187	0.0007	0.0254	0.0007	0.002	2.26E-16	85.7	**16.03**	**0.12**
SIYOM	235-39	1.98E-04	1.21E-06	46.044	0.286	47.823	0.266	0.0137	0.0005	0.0059	0.0004	0.002	2.77E-16	96.3	**16.35**	**0.1**
SIYOM	235-40	1.98E-04	1.21E-06	44.124	0.231	45.256	0.208	0.0136	0.0005	0.0037	0.0004	0.002	3.29E-16	97.6	**15.67**	**0.08**
SIYOM	235-41	1.98E-04	1.21E-06	46.34	0.181	47.592	0.163	0.0145	0.0004	0.0042	0.0003	0.002	5.62E-16	97.4	**16.45**	**0.06**
SIYOM	235-42	1.98E-04	1.21E-06	43.637	0.164	44.589	0.153	0.0142	0.0004	0.0031	0.0002	0.002	5.02E-16	97.9	**15.5**	**0.06**
SIYOM	235-43	1.98E-04	1.21E-06	45.422	0.116	50.043	0.11	0.0155	0.0002	0.0156	0.0002	0.002	1.13E-15	90.8	**16.13**	**0.04**
SIYOM	235-44	1.98E-04	1.21E-06	45.788	0.142	47.244	0.133	0.0132	0.0003	0.0048	0.0002	0.002	6.67E-16	97	**16.26**	**0.05**
SIYOM	235-45	1.98E-04	1.21E-06	43.771	0.36	46.115	0.252	0.0147	0.0009	0.0078	0.0009	0.002	1.42E-16	95	**15.54**	**0.13**
SIYOM	235-46	1.98E-04	1.21E-06	44.151	0.386	48.182	0.288	0.016	0.0009	0.0136	0.0009	0.002	1.36E-16	91.7	**15.68**	**0.14**
SIYOM	235-47	1.98E-04	1.21E-06	44.864	0.294	46.078	0.237	0.0131	0.0007	0.004	0.0006	0.002	2.02E-16	97.4	**15.93**	**0.1**
SIYOM	235-48	1.98E-04	1.21E-06	47.661	0.176	50.464	0.145	0.0148	0.0004	0.0094	0.0004	0.002	7.09E-16	94.5	**16.92**	**0.06**
SIYOM	235-49	1.98E-04	1.21E-06	59.991	0.104	64.869	0.102	0.0163	0.0002	0.0164	0.0001	0.002	2.33E-15	92.5	**21.27**	**0.04**
SIYOM	235-50	1.98E-04	1.21E-06	44.506	0.069	48.398	0.064	0.0155	0.0002	0.0131	0.0001	0.002	3.28E-15	92	**15.8**	**0.02**
Siang River samples																
KAPU (250-500 um)	230-01	1.95E-04	1.01E-06	27.656	0.187	29.841	0.132	0.0142	0.0005	0.0073	0.0005	0.002	2.69E-16	92.8	**9.72**	**0.07**
KAPU (250-500 um)	230-02	1.95E-04	1.01E-06	27.137	0.322	33.919	0.18	0.0157	0.0008	0.0229	0.001	0.002	2.40E-16	80.1	**9.54**	**0.11**
KAPU (250-500 um)	230-03	1.95E-04	1.01E-06	53.291	0.282	56.118	0.265	0.014	0.0005	0.0095	0.0004	0.002	3.14E-16	95	**18.69**	**0.1**
KAPU (250-500 um)	230-04	1.95E-04	1.01E-06	62.96	0.212	64.701	0.206	0.0132	0.0003	0.0058	0.0002	0.002	7.19E-16	97.4	**22.06**	**0.07**
KAPU (250-500 um)	230-05	1.95E-04	1.01E-06	18.644	0.273	22.713	0.145	0.0138	0.0009	0.0137	0.0008	0.002	1.38E-16	82.2	**6.56**	**0.1**
KAPU (250-500 um)	230-06	1.95E-04	1.01E-06	61.493	0.328	72.144	0.315	0.0202	0.0005	0.036	0.0006	0.002	3.97E-16	85.3	**21.54**	**0.11**
KAPU (250-500 um)	230-07	1.95E-04	1.01E-06	27.48	0.133	28.171	0.114	0.0133	0.0004	0.0023	0.0002	0.002	5.02E-16	97.6	**9.66**	**0.05**
KAPU (250-500 um)	230-08	1.95E-04	1.01E-06	26.238	0.123	26.683	0.107	0.0127	0.0004	0.0014	0.0002	0.002	4.89E-16	98.4	**9.22**	**0.04**

KAPU (250-500 um)	230-09	1.95E-04	1.01E-06	24.403	0.258	31.576	0.143	0.0174	0.0007	0.0242	0.0008	0.002	2.58E-16	77.4	**8.58**	**0.09**
KAPU (250-500 um)	230-10	1.95E-04	1.01E-06	43.645	0.223	46.481	0.193	0.014	0.0005	0.0095	0.0004	0.002	3.81E-16	94	**15.32**	**0.08**
KAPU (250-500 um)	230-11	1.95E-04	1.01E-06	43.962	0.447	47.456	0.32	0.014	0.001	0.0117	0.0011	0.002	1.14E-16	92.7	**15.43**	**0.16**
KAPU (250-500 um)	230-12	1.95E-04	1.01E-06	32.92	0.483	34.262	0.261	0.0155	0.0015	0.0045	0.0014	0.002	8.32E-17	96.2	**11.57**	**0.17**
KAPU (250-500 um)	230-13	1.95E-04	1.01E-06	54.373	0.502	59.237	0.392	0.0143	0.001	0.0164	0.0012	0.002	1.07E-16	91.8	**19.06**	**0.18**
KAPU (250-500 um)	230-14	1.95E-04	1.01E-06	31.184	0.214	32.588	0.14	0.0129	0.0006	0.0047	0.0006	0.002	2.21E-16	95.8	**10.96**	**0.07**
KAPU (250-500 um)	230-15	1.95E-04	1.01E-06	26.099	0.151	29.056	0.105	0.0144	0.0004	0.0099	0.0004	0.002	5.26E-16	89.9	**9.18**	**0.05**
KAPU (250-500 um)	230-16	1.95E-04	1.01E-06	1.108	0.523	20.961	0.129	0.029	0.0012	0.0671	0.0018	0.003	1.44E-16	5.3	**0.39**	**0.18**
KAPU (250-500 um)	230-17	1.95E-04	1.01E-06	27.248	0.433	30.27	0.237	0.0152	0.0012	0.0101	0.0013	0.002	9.60E-17	90.1	**9.58**	**0.15**
KAPU (250-500 um)	230-18	1.95E-04	1.01E-06	25.138	0.263	28.814	0.167	0.0158	0.0008	0.0124	0.0007	0.002	1.74E-16	87.3	**8.84**	**0.09**
KAPU (250-500 um)	230-19	1.95E-04	1.01E-06	402.371	1.782	404.265	1.784	0.0128	0.0005	0.0063	0.0005	0.002	3.07E-16	99.5	**136.52**	**0.58**
KAPU (250-500 um)	230-20	1.95E-04	1.01E-06	12.993	0.115	14.102	0.062	0.0134	0.0005	0.0037	0.0003	0.002	3.37E-16	92.3	**4.57**	**0.04**
KAPU (250-500 um)	230-21	1.95E-04	1.01E-06	14.603	0.318	18.816	0.104	0.0159	0.0008	0.0142	0.001	0.002	1.89E-16	77.7	**5.14**	**0.11**
KAPU (250-500 um)	230-22	1.95E-04	1.01E-06	15.456	0.081	16.516	0.065	0.0132	0.0003	0.0035	0.0002	0.002	7.66E-16	93.7	**5.44**	**0.03**
KAPU (250-500 um)	230-23	1.95E-04	1.01E-06	38.002	0.229	54.537	0.218	0.0254	0.0004	0.0559	0.0005	0.003	6.33E-16	69.7	**13.34**	**0.08**
KAPU (250-500 um)	230-24	1.95E-04	1.01E-06	0.873	0.429	6.411	0.073	0.0187	0.0015	0.0187	0.0014	0.003	9.33E-17	13.7	**0.31**	**0.15**
KAPU (250-500 um)	230-25	1.95E-04	1.01E-06	71.06	0.403	77.782	0.375	0.0171	0.0007	0.0227	0.0007	0.002	2.16E-16	91.4	**24.87**	**0.14**
KAPU (250-500 um)	230-26	1.95E-04	1.01E-06	19.498	0.248	30.466	0.141	0.0198	0.0007	0.037	0.0008	0.002	2.49E-16	64.1	**6.86**	**0.09**
KAPU (250-500 um)	230-27	1.95E-04	1.01E-06	24.473	0.278	25.788	0.131	0.0135	0.0008	0.0044	0.0008	0.002	2.60E-16	95	**8.61**	**0.1**
KAPU (250-500 um)	230-28	1.95E-04	1.01E-06	50.898	0.302	52.943	0.275	0.0156	0.0007	0.0068	0.0005	0.002	2.42E-16	96.2	**17.85**	**0.11**
KAPU (250-500 um)	230-29	1.95E-04	1.01E-06	16.764	0.874	35.639	0.328	0.0266	0.0022	0.0638	0.003	0.002	6.08E-17	47.1	**5.9**	**0.31**
KAPU (250-500 um)	230-30	1.95E-04	1.01E-06	23.001	0.169	24.607	0.109	0.0136	0.0006	0.0054	0.0005	0.002	2.54E-16	93.6	**8.09**	**0.06**
KAPU (250-500 um)	230-31	1.95E-04	1.01E-06	11.28	0.242	12.342	0.061	0.0137	0.0007	0.0035	0.0008	0.002	2.63E-16	91.6	**3.97**	**0.09**
KAPU (250-500 um)	230-32	1.95E-04	1.01E-06	22.623	0.395	23.773	0.164	0.0126	0.0012	0.0038	0.0012	0.002	1.02E-16	95.3	**7.96**	**0.14**
KAPU (250-500 um)	230-33	1.95E-04	1.01E-06	16.599	0.585	24.244	0.224	0.0181	0.0017	0.0258	0.0019	0.002	6.33E-17	68.5	**5.84**	**0.21**
KAPU (250-500 um)	230-34	1.95E-04	1.01E-06	39.525	0.206	40.833	0.181	0.0148	0.0005	0.0043	0.0004	0.002	3.24E-16	96.9	**13.88**	**0.07**
KAPU (250-500 um)	230-35	1.95E-04	1.01E-06	3.14	0.219	4.772	0.035	0.055	0.0015	0.0055	0.0007	0.009	1.27E-16	66.2	**1.11**	**0.08**
KAPU (250-500 um)	230-36	1.95E-04	1.01E-06	6.829	0.083	8.935	0.035	0.018	0.0005	0.007	0.0003	0.003	4.58E-16	76.7	**2.41**	**0.03**
KAPU (250-500 um)	230-37	1.95E-04	1.01E-06	15.754	0.197	16.732	0.068	0.0144	0.0006	0.0032	0.0006	0.002	3.33E-16	94.3	**5.54**	**0.07**
KAPU (250-500 um)	230-38	1.95E-04	1.01E-06	65.699	0.5	67.435	0.428	0.013	0.0009	0.0058	0.0009	0.002	1.20E-16	97.5	**23.01**	**0.17**
KAPU (250-500 um)	230-39	1.95E-04	1.01E-06	71.266	0.994	73.42	0.805	0.0119	0.0019	0.0072	0.0021	0.002	4.87E-17	97.1	**24.95**	**0.35**
KAPU (250-500 um)	230-40	1.95E-04	1.01E-06	1.614	1.943	11.448	0.28	0.0185	0.0053	0.0332	0.0066	0.002	1.44E-17	14.1	**0.57**	**0.68**
KAPU (250-500 um)	230-41	1.95E-04	1.01E-06	72.68	0.406	82.796	0.363	0.0188	0.0007	0.0342	0.0008	0.002	2.32E-16	87.8	**25.44**	**0.14**
KAPU (250-500 um)	230-42	1.95E-04	1.01E-06	68.738	0.512	69.236	0.471	0.0127	0.0008	0.0016	0.0007	0.002	1.52E-16	99.3	**24.07**	**0.18**
KAPU (250-500 um)	230-43	1.95E-04	1.01E-06	46.01	0.258	47.481	0.234	0.0127	0.0005	0.0049	0.0004	0.002	3.10E-16	97	**16.14**	**0.09**
KAPU (250-500 um)	230-44	1.95E-04	1.01E-06	20.855	0.288	23.844	0.156	0.0146	0.0009	0.01	0.0009	0.002	1.28E-16	87.6	**7.34**	**0.1**
KAPU (250-500 um)	230-45	1.95E-04	1.01E-06	32.934	0.24	39.151	0.196	0.0176	0.0007	0.021	0.0006	0.002	2.42E-16	84.2	**11.57**	**0.08**
KAPU (250-500 um)	230-46	1.95E-04	1.01E-06	23.266	0.188	26.8	0.124	0.0153	0.0006	0.0119	0.0005	0.002	3.19E-16	86.9	**8.18**	**0.07**
KAPU (250-500 um)	230-47	1.95E-04	1.01E-06	210.916	1.506	218.067	1.51	0.0169	0.0012	0.0241	0.0012	0.002	1.11E-16	96.7	**72.85**	**0.51**
KAPU (250-500 um)	230-48	1.95E-04	1.01E-06	21.472	1.538	35.25	0.563	0.0187	0.0037	0.0465	0.0051	0.002	2.21E-17	61	**7.55**	**0.54**
KAPU (250-500 um)	230-49	1.95E-04	1.01E-06	1.937	0.09	3.141	0.015	0.0151	0.0004	0.004	0.0003	0.002	5.14E-16	62.2	**0.68**	**0.03**
KAPU (250-500 um)	230-50	1.95E-04	1.01E-06	22.977	0.527	42.452	0.323	0.0236	0.0013	0.0658	0.0017	0.002	9.86E-17	54.2	**8.08**	**0.18**
KAPU (500-1000 um)	228-01	1.94E-04	1.15E-06	33.478	0.094	34.346	0.089	0.0132	0.0003	0.0029	0.0001	0.002	1.02E-15	97.6	**11.68**	**0.03**
KAPU (500-1000 um)	228-02	1.94E-04	1.15E-06	34.938	0.204	49.042	0.176	0.0259	0.0005	0.0477	0.0005	0.003	4.99E-16	71.3	**12.18**	**0.07**
KAPU (500-1000 um)	228-03	1.94E-04	1.15E-06	24.808	0.11	29.354	0.096	0.0156	0.0003	0.0153	0.0002	0.002	7.65E-16	84.6	**8.66**	**0.04**
KAPU (500-1000 um)	228-04	1.94E-04	1.15E-06	28.099	0.098	31.07	0.087	0.0152	0.0002	0.01	0.0002	0.002	1.02E-15	90.5	**9.81**	**0.03**
KAPU (500-1000 um)	228-05	1.94E-04	1.15E-06	45.124	0.265	61.299	0.235	0.0244	0.0006	0.0547	0.0006	0.002	3.92E-16	73.6	**15.72**	**0.09**
KAPU (500-1000 um)	228-06	1.94E-04	1.15E-06	349.71	1.492	352.598	1.497	0.0137	0.0006	0.0097	0.0004	0.002	2.87E-16	99.2	**118.4**	**0.49**
KAPU (500-1000 um)	228-07	1.94E-04	1.15E-06	35.998	0.205	38.799	0.185	0.0163	0.0005	0.0094	0.0003	0.002	4.19E-16	92.8	**12.55**	**0.07**
KAPU (500-1000 um)	228-08	1.94E-04	1.15E-06	78.574	0.314	82.585	0.31	0.0151	0.0004	0.0135	0.0003	0.002	4.78E-16	95.2	**27.29**	**0.11**
KAPU (500-1000 um)	228-09	1.94E-04	1.15E-06	8.379	0.126	12.474	0.048	0.0163	0.0005	0.0138	0.0004	0.002	3.52E-16	67.3	**2.93**	**0.04**
KAPU (500-1000 um)	228-10	1.94E-04	1.15E-06	78.289	0.323	80.572	0.31	0.0139	0.0004	0.0076	0.0004	0.002	3.51E-16	97.2	**27.19**	**0.11**
KAPU (500-1000 um)	228-11	1.94E-04	1.15E-06	65.023	0.314	69.31	0.3	0.0155	0.0005	0.0144	0.0004	0.002	3.50E-16	93.9	**22.61**	**0.11**
KAPU (500-1000 um)	228-12	1.94E-04	1.15E-06	50.212	0.173	56.841	0.164	0.0173	0.0003	0.0224	0.0003	0.002	8.51E-16	88.4	**17.49**	**0.06**
KAPU (500-1000 um)	228-13	1.94E-04	1.15E-06	24.378	0.129	25.397	0.111	0.0137	0.0004	0.0034	0.0002	0.002	4.89E-16	96.1	**8.51**	**0.05**

KAPU (500-1000 um)	228-14	1.94E-04	1.15E-06	69.495	0.206	70.408	0.203	0.0132	0.0002	0.003	0.0001	0.002	9.60E-16	98.7	**24.16**	**0.07**
KAPU (500-1000 um)	228-15	1.94E-04	1.15E-06	12.127	0.09	16.974	0.06	0.0159	0.0003	0.0163	0.0002	0.002	8.34E-16	71.6	**4.24**	**0.03**
KAPU (500-1000 um)	228-16	1.94E-04	1.15E-06	67.061	0.268	69.601	0.255	0.0139	0.0005	0.0085	0.0003	0.002	4.19E-16	96.4	**23.32**	**0.09**
KAPU (500-1000 um)	228-17	1.94E-04	1.15E-06	22.974	0.15	26.067	0.123	0.0157	0.0004	0.0104	0.0003	0.002	4.41E-16	88.2	**8.02**	**0.05**
KAPU (500-1000 um)	228-18	1.94E-04	1.15E-06	21.836	0.118	26.521	0.091	0.0159	0.0003	0.0158	0.0003	0.002	7.78E-16	82.4	**7.63**	**0.04**
KAPU (500-1000 um)	228-19	1.94E-04	1.15E-06	47.219	0.158	48.285	0.15	0.0131	0.0003	0.0035	0.0002	0.002	7.50E-16	97.8	**16.45**	**0.05**
KAPU (500-1000 um)	228-20	1.94E-04	1.15E-06	56.498	0.141	61.167	0.139	0.0154	0.0002	0.0157	0.0001	0.002	2.17E-15	92.4	**19.66**	**0.05**
KAPU (500-1000 um)	228-21	1.94E-04	1.15E-06	64.858	0.215	67.853	0.211	0.0138	0.0003	0.0101	0.0002	0.002	8.29E-16	95.6	**22.55**	**0.07**
KAPU (500-1000 um)	228-22	1.94E-04	1.15E-06	4.675	0.065	6.665	0.019	0.0148	0.0003	0.0066	0.0002	0.002	7.33E-16	70.4	**1.64**	**0.02**
KAPU (500-1000 um)	228-23	1.94E-04	1.15E-06	42.851	0.14	45.839	0.133	0.0152	0.0003	0.01	0.0002	0.002	8.99E-16	93.5	**14.93**	**0.05**
KAPU (500-1000 um)	228-53	1.94E-04	1.15E-06	42.18	0.154	48.224	0.131	0.0175	0.0003	0.0204	0.0003	0.002	8.98E-16	87.5	**14.7**	**0.05**
KAPU (500-1000 um)	228-54	1.94E-04	1.15E-06	57.452	0.295	61.685	0.275	0.0152	0.0005	0.0142	0.0005	0.002	3.28E-16	93.2	**19.99**	**0.1**
KAPU (500-1000 um)	228-55	1.94E-04	1.15E-06	48.843	0.21	49.927	0.198	0.0131	0.0004	0.0036	0.0003	0.002	4.41E-16	97.9	**17.01**	**0.07**
KAPU (500-1000 um)	228-56	1.94E-04	1.15E-06	70.084	0.324	71.17	0.308	0.0131	0.0005	0.0036	0.0004	0.002	3.47E-16	98.5	**24.36**	**0.11**
KAPU (500-1000 um)	228-57	1.94E-04	1.15E-06	29.747	0.199	32.06	0.153	0.0168	0.0006	0.0077	0.0005	0.003	2.47E-16	92.9	**10.38**	**0.07**
KAPU (500-1000 um)	228-58	1.94E-04	1.15E-06	58.434	0.27	61.109	0.254	0.0145	0.0005	0.009	0.0004	0.002	3.74E-16	95.7	**20.33**	**0.09**
KAPU (500-1000 um)	228-59	1.94E-04	1.15E-06	66.998	0.206	70.473	0.201	0.014	0.0003	0.0117	0.0002	0.002	9.88E-16	95.1	**23.29**	**0.07**
KAPU (500-1000 um)	228-60	1.94E-04	1.15E-06	51.348	0.293	53.347	0.272	0.0159	0.0006	0.0067	0.0004	0.002	2.82E-16	96.3	**17.88**	**0.1**
KAPU (500-1000 um)	228-61	1.94E-04	1.15E-06	58.434	0.266	64.02	0.254	0.0164	0.0005	0.0188	0.0004	0.002	4.28E-16	91.3	**20.33**	**0.09**
KAPU (500-1000 um)	228-62	1.94E-04	1.15E-06	323.701	1.865	345.357	1.925	0.0694	0.0016	0.0732	0.0015	0.009	1.46E-16	93.7	**109.86**	**0.61**
KAPU (500-1000 um)	228-63	1.94E-04	1.15E-06	19.348	0.305	29.255	0.173	0.0185	0.0009	0.0334	0.001	0.002	1.59E-16	66.2	**6.76**	**0.11**
KAPU (500-1000 um)	228-64	1.94E-04	1.15E-06	30.96	0.295	40.514	0.231	0.0181	0.0008	0.0322	0.0008	0.002	2.08E-16	76.5	**10.8**	**0.1**
KAPU (500-1000 um)	228-65	1.94E-04	1.15E-06	43.822	0.206	46.424	0.188	0.0146	0.0004	0.0087	0.0003	0.002	3.94E-16	94.5	**15.27**	**0.07**
KAPU (500-1000 um)	228-66	1.94E-04	1.15E-06	68.592	0.764	69.548	0.635	0.0115	0.0015	0.0032	0.0015	0.002	6.59E-17	98.7	**23.84**	**0.26**
KAPU (500-1000 um)	228-67	1.94E-04	1.15E-06	31.076	0.197	31.891	0.173	0.0132	0.0005	0.0027	0.0003	0.002	3.93E-16	97.5	**10.84**	**0.07**
KAPU (500-1000 um)	228-68	1.94E-04	1.15E-06	58.172	0.488	61.561	0.407	0.0176	0.001	0.0114	0.001	0.003	1.25E-16	94.5	**20.24**	**0.17**
KAPU (500-1000 um)	228-69	1.94E-04	1.15E-06	6.441	0.467	26.6	0.208	0.0531	0.002	0.0682	0.0017	0.007	9.86E-17	24.2	**2.25**	**0.16**
KAPU (500-1000 um)	228-70	1.94E-04	1.15E-06	77.959	18.877	2303.625	94.458	1.419	0.0683	7.5318	0.3137	0.001	6.69E-18	3.4	**27.08**	**6.51**
KAPU (500-1000 um)	228-71	1.94E-04	1.15E-06	50.571	0.337	53.515	0.314	0.014	0.0007	0.0099	0.0005	0.002	2.41E-16	94.5	**17.61**	**0.12**
KAPU (500-1000 um)	228-72	1.94E-04	1.15E-06	194.737	0.762	196.542	0.761	0.0138	0.0004	0.006	0.0003	0.002	4.02E-16	99.1	**66.89**	**0.26**
KAPU (500-1000 um)	228-73	1.94E-04	1.15E-06	74.853	0.616	89.457	0.601	0.0222	0.001	0.0493	0.0011	0.002	1.29E-16	83.7	**26.01**	**0.21**
KAPU (500-1000 um)	228-74	1.94E-04	1.15E-06	56.034	0.228	57.899	0.216	0.0147	0.0004	0.0062	0.0003	0.002	4.76E-16	96.8	**19.5**	**0.08**
KAPU (500-1000 um)	228-75	1.94E-04	1.15E-06	0.988	0.354	6.868	0.05	0.0166	0.0011	0.0198	0.0012	0.002	1.04E-16	14.4	**0.35**	**0.12**
KAPU (500-1000 um)	228-76	1.94E-04	1.15E-06	30.35	0.465	34.61	0.293	0.0171	0.0014	0.0143	0.0013	0.002	8.24E-17	87.8	**10.59**	**0.16**
KAPU (500-1000 um)	228-77	1.94E-04	1.15E-06	60.291	0.32	67.332	0.314	0.0179	0.0005	0.0237	0.0005	0.002	3.75E-16	89.6	**20.98**	**0.11**
KAPU (500-1000 um)	228-78	1.94E-04	1.15E-06	72.165	0.425	83.991	0.421	0.0197	0.0006	0.0399	0.0007	0.002	3.02E-16	85.9	**25.08**	**0.15**
KAPU (500-1000 um)	228-79	1.94E-04	1.15E-06	51.147	0.771	58.93	0.572	0.0156	0.0018	0.0263	0.002	0.002	6.27E-17	86.8	**17.81**	**0.27**
KAPU (500-1000 um)	228-80	1.94E-04	1.15E-06	18.874	0.224	24.645	0.124	0.0161	0.0007	0.0194	0.0007	0.002	1.92E-16	76.7	**6.59**	**0.08**
KAPU (500-1000 um)	228-81	1.94E-04	1.15E-06	18.994	0.121	24.068	0.083	0.0159	0.0003	0.0171	0.0003	0.002	7.28E-16	79	**6.63**	**0.04**
KAPU (500-1000 um)	228-82	1.94E-04	1.15E-06	28.706	0.197	29.042	0.168	0.0131	0.0004	0.0011	0.0004	0.002	3.65E-16	98.9	**10.02**	**0.07**
KAPU (500-1000 um)	228-83	1.94E-04	1.15E-06	61.213	0.147	61.734	0.144	0.0128	0.0002	0.0017	0.0001	0.002	1.20E-15	99.2	**21.29**	**0.05**
KAPU (500-1000 um)	228-84	1.94E-04	1.15E-06	121.698	1.379	123.808	1.26	0.0138	0.0017	0.0071	0.002	0.002	4.37E-17	98.3	**42.09**	**0.47**
KAPU (500-1000 um)	228-85	1.94E-04	1.15E-06	67.751	0.704	85.114	0.626	0.024	0.0015	0.0587	0.0017	0.002	8.00E-17	79.6	**23.55**	**0.24**
KAPU (500-1000 um)	228-86	1.94E-04	1.15E-06	1.609	0.171	2.77	0.016	0.0159	0.0008	0.0039	0.0006	0.003	2.11E-16	58.7	**0.56**	**0.06**
KAPU (500-1000 um)	228-87	1.94E-04	1.15E-06	30.05	0.146	33.672	0.129	0.0158	0.0003	0.0122	0.0003	0.002	6.92E-16	89.3	**10.49**	**0.05**
KAPU (500-1000 um)	228-88	1.94E-04	1.15E-06	128.048	0.628	137.944	0.631	0.0191	0.0006	0.0334	0.0007	0.002	2.50E-16	92.8	**44.26**	**0.21**
KAPU (500-1000 um)	228-89	1.94E-04	1.15E-06	30.807	0.213	38.2	0.173	0.0183	0.0005	0.0249	0.0005	0.002	5.02E-16	80.7	**10.75**	**0.07**
KAPU (500-1000 um)	228-90	1.94E-04	1.15E-06	57.105	0.363	59.289	0.337	0.014	0.0007	0.0073	0.0005	0.002	2.58E-16	96.4	**19.87**	**0.13**
KAPU (500-1000 um)	228-91	1.94E-04	1.15E-06	35.189	0.225	39.453	0.202	0.0188	0.0004	0.0144	0.0004	0.003	3.70E-16	89.3	**12.27**	**0.08**
KAPU (500-1000 um)	228-92	1.94E-04	1.15E-06	21.585	0.574	48.161	0.353	0.0298	0.0014	0.0899	0.002	0.002	1.11E-16	44.8	**7.54**	**0.2**
KAPU (500-1000 um)	228-93	1.94E-04	1.15E-06	355.359	2.542	367.933	2.584	0.0205	0.0012	0.0425	0.0014	0.002	1.04E-16	96.6	**120.25**	**0.83**
KAPU (500-1000 um)	228-94	1.94E-04	1.15E-06	58.638	0.54	63.397	0.435	0.0172	0.0011	0.016	0.0012	0.002	1.09E-16	92.5	**20.4**	**0.19**
KAPU (500-1000 um)	228-95	1.94E-04	1.15E-06	124.977	1.868	125.097	1.469	0.0114	0.0031	0.0003	0.0039	0.002	4.17E-17	99.9	**43.21**	**0.64**
KAPU (500-1000 um)	228-96	1.94E-04	1.15E-06	31.396	0.394	38.118	0.268	0.0168	0.001	0.0227	0.0011	0.002	1.10E-16	82.4	**10.95**	**0.14**
KAPU (500-1000 um)	228-97	1.94E-04	1.15E-06	1.768	0.556	12.537	0.122	0.0212	0.0017	0.0364	0.0019	0.002	7.11E-17	14.1	**0.62**	**0.19**
KAPU (500-1000 um)	228-98	1.94E-04	1.15E-06	63.824	0.264	68.113	0.258	0.0158	0.0004	0.0144	0.0003	0.002	5.23E-16	93.7	**22.2**	**0.09**

KAPU (500-1000 um)	228-99	1.94E-04	1.15E-06	43.174	0.218	45.377	0.203	0.0148	0.0004	0.0074	0.0003	0.002	4.24E-16	95.2	**15.05**	**0.08**
KAPU (500-1000 um)	228-100	1.94E-04	1.15E-06	22.509	0.115	24.138	0.103	0.0139	0.0003	0.0054	0.0002	0.002	6.38E-16	93.4	**7.86**	**0.04**
KAPU (500-1000 um)	228-101	1.94E-04	1.15E-06	22.583	0.414	25.774	0.199	0.0163	0.0012	0.0107	0.0013	0.002	9.60E-17	87.7	**7.89**	**0.14**
KAPU (500-1000 um)	228-102	1.94E-04	1.15E-06	34.452	0.407	43.581	0.254	0.0196	0.001	0.0308	0.0012	0.002	1.48E-16	79.1	**12.02**	**0.14**
KAPU (500-1000 um)	228-103	1.94E-04	1.15E-06	2.699	0.076	9.013	0.021	0.0342	0.0004	0.0213	0.0003	0.005	9.89E-16	30	**0.94**	**0.03**
KAPU (500-1000 um)	228-104	1.94E-04	1.15E-06	17.889	0.297	24.178	0.154	0.015	0.0009	0.0212	0.0009	0.002	1.49E-16	74.1	**6.25**	**0.1**
KAPU (500-1000 um)	228-105	1.94E-04	1.15E-06	52.225	0.433	56.161	0.375	0.0169	0.0009	0.0132	0.0009	0.002	1.31E-16	93	**18.18**	**0.15**
KAPU (500-1000 um)	228-106	1.94E-04	1.15E-06	42.048	0.311	48.643	0.278	0.0171	0.0006	0.0222	0.0006	0.002	2.63E-16	86.5	**14.65**	**0.11**
NUBO	225-01	2.04E-04	1.04E-06	35.793	0.567	41.34	0.359	0.0163	0.0015	0.0187	0.0016	0.002	6.44E-17	86.64	**13.11**	**0.21**
NUBO	225-02	2.04E-04	1.04E-06	51.473	1.238	60.298	0.803	0.0172	0.0028	0.0298	0.0035	0.002	3.45E-17	85.4	**18.82**	**0.45**
NUBO	225-03	2.04E-04	1.04E-06	21.497	1.27	31.166	0.478	0.0173	0.0032	0.0326	0.0042	0.002	2.54E-17	69.04	**7.88**	**0.46**
NUBO	225-04	2.04E-04	1.04E-06	46.001	0.335	52.557	0.272	0.017	0.0007	0.0221	0.0008	0.002	1.71E-16	87.57	**16.83**	**0.12**
NUBO	225-05	2.04E-04	1.04E-06	48.105	0.626	74.336	0.483	0.0303	0.0013	0.0887	0.0019	0.002	1.13E-16	64.74	**17.6**	**0.23**
NUBO	225-06	2.04E-04	1.04E-06	68.639	0.262	69.58	0.253	0.0136	0.0003	0.0031	0.0003	0.002	5.72E-16	98.69	**25.06**	**0.09**
NUBO	225-07	2.04E-04	1.04E-06	47.248	0.158	48.222	0.155	0.0133	0.0002	0.0032	0.0001	0.002	1.11E-15	98.04	**17.28**	**0.06**
NUBO	225-08	2.04E-04	1.04E-06	38.187	0.268	41.932	0.231	0.0144	0.0005	0.0126	0.0005	0.002	2.95E-16	91.13	**13.98**	**0.1**
NUBO	225-09	2.04E-04	1.04E-06	1.103	0.113	3.018	0.014	0.0153	0.0005	0.0064	0.0004	0.002	3.54E-16	36.89	**0.41**	**0.04**
NUBO	225-10	2.04E-04	1.04E-06	70.989	0.258	73.874	0.249	0.0143	0.0004	0.0097	0.0003	0.002	5.41E-16	96.13	**25.91**	**0.09**
NUBO	225-11	2.04E-04	1.04E-06	434.336	1.254	447.873	1.274	0.0545	0.0006	0.0458	0.0004	0.008	8.92E-16	96.98	**152.98**	**0.42**
NUBO	225-12	2.04E-04	1.04E-06	20.485	0.201	31.236	0.127	0.0205	0.0005	0.0363	0.0006	0.002	5.01E-16	65.64	**7.51**	**0.07**
NUBO	225-13	2.04E-04	1.04E-06	1.494	0.263	22.248	0.087	0.0288	0.0008	0.0702	0.0009	0.003	2.84E-16	6.72	**0.55**	**0.1**
NUBO	225-14	2.04E-04	1.04E-06	59.353	0.234	61.996	0.227	0.0143	0.0004	0.0089	0.0003	0.002	4.93E-16	95.78	**21.69**	**0.08**
NUBO	225-15	2.04E-04	1.04E-06	18.828	0.12	24.964	0.092	0.0175	0.0004	0.0207	0.0003	0.002	6.61E-16	75.51	**6.91**	**0.04**
NUBO	225-16	2.04E-04	1.04E-06	59.554	0.178	68.761	0.168	0.0187	0.0003	0.0311	0.0003	0.002	1.35E-15	86.64	**21.76**	**0.06**
NUBO	225-17	2.04E-04	1.04E-06	31.642	0.085	33.821	0.079	0.0251	0.0003	0.0073	0.0001	0.004	1.48E-15	93.63	**11.59**	**0.03**
NUBO	225-18	2.04E-04	1.04E-06	485.853	1.018	492.383	1.023	0.0208	0.0002	0.022	0.0002	0.003	2.66E-15	98.68	**170.29**	**0.34**
NUBO	225-19	2.04E-04	1.04E-06	23.048	0.072	24.564	0.064	0.0156	0.0003	0.005	0.0001	0.002	1.39E-15	93.94	**8.45**	**0.03**
NUBO	225-20	2.04E-04	1.04E-06	26.168	0.201	30.287	0.142	0.0164	0.0005	0.0139	0.0005	0.002	4.69E-16	86.48	**9.59**	**0.07**
NUBO	225-21	2.04E-04	1.04E-06	67.27	0.334	71.695	0.322	0.0157	0.0005	0.0149	0.0004	0.002	3.49E-16	93.87	**24.56**	**0.12**
NUBO	225-22	2.04E-04	1.04E-06	665.37	3.365	671.81	3.384	0.0169	0.0008	0.0217	0.0007	0.002	1.92E-16	99.05	**229.36**	**1.09**
NUBO	225-23	2.04E-04	1.04E-06	74.946	0.3	76.967	0.29	0.0135	0.0004	0.0068	0.0003	0.002	4.62E-16	97.41	**27.34**	**0.11**
NUBO	225-24	2.04E-04	1.04E-06	2.169	0.158	11.951	0.048	0.0194	0.0005	0.033	0.0005	0.002	4.43E-16	18.19	**0.8**	**0.06**
NUBO	225-25	2.04E-04	1.04E-06	20.569	0.168	22.453	0.116	0.0141	0.0006	0.0063	0.0004	0.002	2.65E-16	91.72	**7.54**	**0.06**
NUBO	225-26	2.04E-04	1.04E-06	15.683	0.103	18.278	0.08	0.0147	0.0004	0.0087	0.0002	0.002	6.56E-16	85.94	**5.76**	**0.04**
NUBO	225-27	2.04E-04	1.04E-06	13.372	0.077	14.475	0.048	0.0135	0.0004	0.0037	0.0002	0.002	5.47E-16	92.56	**4.91**	**0.03**
NUBO	225-28	2.04E-04	1.04E-06	44.806	0.228	48.941	0.208	0.0149	0.0005	0.0139	0.0004	0.002	3.20E-16	91.6	**16.4**	**0.08**
NUBO	225-29	2.04E-04	1.04E-06	25.998	0.324	45.318	0.241	0.0244	0.0007	0.0653	0.0009	0.002	2.59E-16	57.4	**9.53**	**0.12**
NUBO	225-30	2.04E-04	1.04E-06	54.025	0.423	62.786	0.319	0.0184	0.001	0.0296	0.0011	0.002	1.32E-16	86.09	**19.75**	**0.15**
NUBO	225-31	2.04E-04	1.04E-06	43.556	0.32	47.839	0.275	0.0151	0.0008	0.0144	0.0007	0.002	1.83E-16	91.1	**15.94**	**0.12**
NUBO	225-32	2.04E-04	1.04E-06	22.728	0.1	25.816	0.074	0.0153	0.0003	0.0104	0.0002	0.002	1.07E-15	88.13	**8.34**	**0.04**
NUBO	225-33	2.04E-04	1.04E-06	58.757	0.208	64.17	0.2	0.0163	0.0004	0.0182	0.0003	0.002	6.45E-16	91.61	**21.47**	**0.08**
NUBO	225-34	2.04E-04	1.04E-06	71.06	0.445	71.993	0.419	0.0132	0.0007	0.0031	0.0005	0.002	1.96E-16	98.74	**25.93**	**0.16**
NUBO	225-35	2.04E-04	1.04E-06	250.122	1.989	263.566	2.017	0.0216	0.0013	0.0454	0.0017	0.002	8.07E-17	94.91	**89.67**	**0.7**
NUBO	225-36	2.04E-04	1.04E-06	383.064	1.969	383.432	1.951	0.0126	0.0009	0.0012	0.0009	0.002	1.59E-16	99.91	**135.58**	**0.67**
NUBO	225-37	2.04E-04	1.04E-06	50.752	0.563	58.655	0.446	0.0176	0.0012	0.0267	0.0014	0.002	8.32E-17	86.57	**18.56**	**0.2**
NUBO	225-38	2.04E-04	1.04E-06	64.072	0.268	72.203	0.255	0.0176	0.0005	0.0274	0.0004	0.002	4.67E-16	88.77	**23.4**	**0.1**
NUBO	225-39	2.04E-04	1.04E-06	417.901	2.096	447.303	2.194	0.0303	0.0007	0.0994	0.0011	0.002	2.67E-16	93.43	**147.42**	**0.71**
NUBO	225-40	2.04E-04	1.04E-06	63.096	0.201	71.849	0.198	0.0178	0.0003	0.0295	0.0002	0.002	1.28E-15	87.85	**23.05**	**0.07**
NUBO	225-41	2.04E-04	1.04E-06	60.793	0.479	108.817	0.443	0.0436	0.0009	0.1624	0.0013	0.002	2.57E-16	55.88	**22.21**	**0.17**
NUBO	225-42	2.04E-04	1.04E-06	73.644	0.482	78.084	0.444	0.0153	0.0007	0.0149	0.0008	0.002	1.77E-16	94.35	**26.87**	**0.17**
NUBO	225-43	2.04E-04	1.04E-06	60.27	0.301	61.66	0.287	0.0134	0.0004	0.0046	0.0004	0.002	2.92E-16	97.79	**22.02**	**0.11**
NUBO	225-44	2.04E-04	1.04E-06	44.933	0.208	50.144	0.183	0.0155	0.0004	0.0176	0.0004	0.002	4.66E-16	89.66	**16.44**	**0.08**
NUBO	225-45	2.04E-04	1.04E-06	17.789	0.135	20.351	0.099	0.0145	0.0004	0.0086	0.0003	0.002	5.56E-16	87.53	**6.53**	**0.05**
NUBO	225-46	2.04E-04	1.04E-06	67.263	0.399	71.632	0.382	0.0155	0.0006	0.0147	0.0006	0.002	2.39E-16	93.94	**24.56**	**0.14**
NUBO	225-47	2.04E-04	1.04E-06	66.928	0.643	70.588	0.561	0.0142	0.0011	0.0123	0.0012	0.002	8.26E-17	94.85	**24.44**	**0.23**

NUBO	225-48	2.04E-04	1.04E-06	44.853	0.116	54.095	0.115	0.0294	0.0002	0.0312	0.0001	0.004	5.77E-15	82.96	**16.41**	**0.04**
NUBO	225-49	2.04E-04	1.04E-06	63.594	0.131	65.306	0.13	0.0137	0.0001	0.0057	0.0001	0.002	6.78E-15	97.42	**23.23**	**0.05**
NUBO	225-50	2.04E-04	1.04E-06	51.342	0.174	52.495	0.168	0.0141	0.0003	0.0038	0.0002	0.002	7.08E-16	97.86	**18.77**	**0.06**
NUBO	225-51	2.04E-04	1.04E-06	61.452	0.208	71.469	0.206	0.0192	0.0002	0.0338	0.0003	0.002	1.25E-15	86.02	**22.45**	**0.08**
NUBO	225-52	2.04E-04	1.04E-06	13.519	0.107	17.266	0.059	0.0147	0.0004	0.0126	0.0003	0.002	4.38E-16	78.43	**4.96**	**0.04**
NUBO	225-53	2.04E-04	1.04E-06	74.08	0.367	82.95	0.374	0.018	0.0002	0.0299	0.0002	0.002	2.37E-15	89.34	**27.03**	**0.13**
NUBO	225-54	2.04E-04	1.04E-06	77.289	0.307	80.213	0.305	0.0146	0.0003	0.0098	0.0003	0.002	5.63E-16	96.39	**28.19**	**0.11**
NUBO	225-55	2.04E-04	1.04E-06	19.311	0.254	20.451	0.127	0.014	0.0008	0.0038	0.0008	0.002	1.30E-16	94.56	**7.08**	**0.09**
NUBO	225-56	2.04E-04	1.04E-06	21.443	0.156	22.765	0.097	0.0134	0.0005	0.0044	0.0004	0.002	2.66E-16	94.31	**7.86**	**0.06**
NUBO	225-57	2.04E-04	1.04E-06	26.851	0.304	33.833	0.202	0.0176	0.0007	0.0236	0.0009	0.002	1.69E-16	79.43	**9.84**	**0.11**
NUBO	225-58	2.04E-04	1.04E-06	59.822	0.481	64.546	0.495	0.0159	0.0003	0.0159	0.0002	0.002	3.21E-15	92.72	**21.86**	**0.17**
NUBO	225-59	2.04E-04	1.04E-06	1.982	0.071	3.243	0.013	0.0143	0.0003	0.0042	0.0002	0.002	8.80E-16	61.63	**0.73**	**0.03**
NUBO	225-60	2.04E-04	1.04E-06	10.746	0.492	26.946	0.195	0.0252	0.0012	0.0547	0.0017	0.003	9.14E-17	39.92	**3.95**	**0.18**
NUBO	225-61	2.04E-04	1.04E-06	48.767	1.664	68.229	1.224	0.0226	0.0034	0.0658	0.0049	0.002	2.34E-17	71.5	**17.84**	**0.61**
NUBO	225-62	2.04E-04	1.04E-06	1.402	1.191	24.148	0.336	0.0257	0.0029	0.0769	0.0042	0.002	3.16E-17	5.81	**0.52**	**0.44**
NUBO	225-63	2.04E-04	1.04E-06	75.859	0.4	88.147	0.395	0.0198	0.0006	0.0415	0.0006	0.002	3.06E-16	86.09	**27.67**	**0.14**
NUBO	225-64	2.04E-04	1.04E-06	2.178	0.339	8.833	0.07	0.022	0.0011	0.0224	0.0011	0.003	1.02E-16	24.74	**0.8**	**0.12**
NUBO	225-65	2.04E-04	1.04E-06	75.001	0.797	78.155	0.721	0.0142	0.0012	0.0106	0.0013	0.002	7.07E-17	96	**27.36**	**0.29**
PASIGHAT	239-04	2.01E-04	1.26E-06	12.892	0.234	15.872	0.086	0.0144	0.0008	0.01	0.0008	0.002	1.53E-16	81.4	**4.68**	**0.08**
PASIGHAT	239-05	2.01E-04	1.26E-06	72.46	0.391	73.531	0.372	0.0135	0.0006	0.0035	0.0004	0.002	2.21E-16	98.6	**26.12**	**0.14**
PASIGHAT	239-06	2.01E-04	1.26E-06	57.223	0.315	61.518	0.293	0.0146	0.0006	0.0145	0.0005	0.002	2.79E-16	93.1	**20.66**	**0.11**
PASIGHAT	239-07	2.01E-04	1.26E-06	23.053	0.132	23.859	0.099	0.0134	0.0004	0.0026	0.0003	0.002	4.68E-16	96.7	**8.35**	**0.05**
PASIGHAT	239-08	2.01E-04	1.26E-06	23.063	0.169	26.402	0.104	0.0142	0.0006	0.0112	0.0005	0.002	2.93E-16	87.4	**8.36**	**0.06**
PASIGHAT	239-09	2.01E-04	1.26E-06	51.376	0.429	53.28	0.345	0.0131	0.001	0.0064	0.0009	0.002	1.18E-16	96.5	**18.56**	**0.15**
PASIGHAT	239-10	2.01E-04	1.26E-06	73.748	0.877	81.825	0.754	0.0159	0.0017	0.0272	0.0019	0.002	5.98E-17	90.2	**26.58**	**0.31**
PASIGHAT	239-11	2.01E-04	1.26E-06	3.936	0.179	14.95	0.058	0.0191	0.0005	0.0372	0.0006	0.002	3.65E-16	26.4	**1.43**	**0.07**
PASIGHAT	239-12	2.01E-04	1.26E-06	77.723	0.79	96.786	0.69	0.0243	0.0013	0.0644	0.0018	0.002	1.16E-16	80.3	**28.01**	**0.28**
PASIGHAT	239-13	2.01E-04	1.26E-06	2.788	0.17	6.889	0.031	0.0233	0.0008	0.0138	0.0006	0.003	2.44E-16	40.6	**1.01**	**0.06**
PASIGHAT	239-14	2.01E-04	1.26E-06	32.858	0.224	36.765	0.187	0.0148	0.0005	0.0131	0.0005	0.002	2.74E-16	89.4	**11.89**	**0.08**
PASIGHAT	239-15	2.01E-04	1.26E-06	38.94	0.211	40.425	0.174	0.0161	0.0005	0.0049	0.0004	0.003	3.05E-16	96.4	**14.09**	**0.08**
PASIGHAT	239-16	2.01E-04	1.26E-06	1.039	0.087	2.243	0.011	0.0138	0.0004	0.004	0.0003	0.002	3.82E-16	46.9	**0.38**	**0.03**
PASIGHAT	239-17	2.01E-04	1.26E-06	16.866	0.331	23.544	0.176	0.017	0.0009	0.0225	0.001	0.002	1.27E-16	71.7	**6.11**	**0.12**
PASIGHAT	239-18	2.01E-04	1.26E-06	27.027	0.136	30.644	0.105	0.0149	0.0004	0.0122	0.0003	0.002	7.50E-16	88.3	**9.79**	**0.05**
PASIGHAT	239-19	2.01E-04	1.26E-06	26.422	0.174	30.14	0.147	0.0149	0.0005	0.0125	0.0004	0.002	3.71E-16	87.7	**9.57**	**0.06**
PASIGHAT	239-20	2.01E-04	1.26E-06	42.433	0.179	46.69	0.166	0.0158	0.0004	0.0143	0.0003	0.002	5.10E-16	90.9	**15.34**	**0.06**
PASIGHAT	239-21	2.01E-04	1.26E-06	47.957	0.395	52.466	0.297	0.0167	0.0009	0.0152	0.001	0.002	1.35E-16	91.5	**17.33**	**0.14**
PASIGHAT	239-22	2.01E-04	1.26E-06	73.657	0.362	76.609	0.345	0.0142	0.0006	0.0099	0.0005	0.002	2.55E-16	96.2	**26.55**	**0.13**
PASIGHAT	239-23	2.01E-04	1.26E-06	70.262	0.312	72.823	0.302	0.0145	0.0005	0.0086	0.0004	0.002	3.57E-16	96.5	**25.34**	**0.11**
PASIGHAT	239-24	2.01E-04	1.26E-06	60.706	0.249	64.348	0.229	0.0146	0.0005	0.0122	0.0004	0.002	3.75E-16	94.4	**21.91**	**0.09**
PASIGHAT	239-25	2.01E-04	1.26E-06	0.872	0.307	18.653	0.102	0.0238	0.0008	0.0601	0.0011	0.002	1.88E-16	4.7	**0.32**	**0.11**
PASIGHAT	239-26	2.01E-04	1.26E-06	42.526	0.258	43.583	0.231	0.0129	0.0006	0.0035	0.0004	0.002	2.81E-16	97.6	**15.38**	**0.09**
PASIGHAT	239-27	2.01E-04	1.26E-06	25.607	0.116	27.599	0.102	0.0146	0.0003	0.0067	0.0002	0.002	6.70E-16	92.9	**9.28**	**0.04**
PASIGHAT	239-28	2.01E-04	1.26E-06	23.746	0.166	26.671	0.14	0.0149	0.0004	0.0098	0.0003	0.002	4.07E-16	89.1	**8.6**	**0.06**
PASIGHAT	239-29	2.01E-04	1.26E-06	0.84	0.075	1.729	0.008	0.0136	0.0004	0.0029	0.0003	0.002	5.08E-16	49.4	**0.31**	**0.03**
PASIGHAT	239-30	2.01E-04	1.26E-06	33.337	0.14	36.766	0.122	0.0153	0.0004	0.0115	0.0003	0.002	5.85E-16	90.7	**12.07**	**0.05**
PASIGHAT	239-31	2.01E-04	1.26E-06	44.351	0.166	44.984	0.152	0.0122	0.0004	0.0021	0.0002	0.002	5.53E-16	98.7	**16.03**	**0.06**
PASIGHAT	239-32	2.01E-04	1.26E-06	45.787	1.389	64.209	0.877	0.0229	0.0029	0.0623	0.0043	0.002	3.22E-17	71.3	**16.55**	**0.5**
PASIGHAT	239-33	2.01E-04	1.26E-06	3.697	0.341	11.122	0.072	0.0194	0.0012	0.025	0.0012	0.002	1.12E-16	33.3	**1.34**	**0.12**
PASIGHAT	239-34	2.01E-04	1.26E-06	19.602	0.342	31.465	0.162	0.0204	0.0008	0.0401	0.0011	0.002	1.54E-16	62.4	**7.1**	**0.12**
PASIGHAT	239-35	2.01E-04	1.26E-06	42.429	0.452	49.543	0.326	0.0171	0.0011	0.024	0.0012	0.002	1.18E-16	85.7	**15.34**	**0.16**
PASIGHAT	239-36	2.01E-04	1.26E-06	43.962	0.559	46.967	0.436	0.0129	0.0013	0.0101	0.0013	0.002	7.66E-17	93.7	**15.89**	**0.2**
PASIGHAT	239-37	2.01E-04	1.26E-06	48.333	0.332	49.266	0.305	0.0132	0.0006	0.0031	0.0005	0.002	2.07E-16	98.2	**17.47**	**0.12**
PASIGHAT	239-38	2.01E-04	1.26E-06	17.114	0.099	18.576	0.063	0.0149	0.0004	0.0049	0.0003	0.002	4.99E-16	92.3	**6.2**	**0.04**
PASIGHAT	239-39	2.01E-04	1.26E-06	1.007	0.114	7.694	0.028	0.017	0.0004	0.0225	0.0004	0.002	5.25E-16	13.1	**0.37**	**0.04**
PASIGHAT	239-40	2.01E-04	1.26E-06	49.509	0.198	57.753	0.187	0.0178	0.0003	0.0278	0.0003	0.002	7.41E-16	85.8	**17.89**	**0.07**

PASIGHAT	239-41	2.01E-04	1.26E-06	53.559	0.28	57.155	0.261	0.0147	0.0004	0.0121	0.0004	0.002	3.62E-16	93.8	**19.35**	**0.1**
PASIGHAT	239-47	2.01E-04	1.26E-06	28.046	0.421	31.189	0.245	0.0154	0.0013	0.0106	0.0012	0.002	8.84E-17	90	**10.16**	**0.15**
PASIGHAT	239-48	2.01E-04	1.26E-06	36.355	0.245	39.504	0.182	0.0152	0.0008	0.0106	0.0006	0.002	1.96E-16	92.1	**13.15**	**0.09**
PASIGHAT	239-49	2.01E-04	1.26E-06	30.865	0.208	30.972	0.149	0.0129	0.0005	0.0003	0.0005	0.002	4.03E-16	99.7	**11.17**	**0.07**
PASIGHAT	239-50	2.01E-04	1.26E-06	55.761	0.251	62.125	0.235	0.0159	0.0005	0.0215	0.0004	0.002	4.33E-16	89.8	**20.14**	**0.09**
PASIGHAT	239-51	2.01E-04	1.26E-06	21.245	0.157	27.245	0.104	0.017	0.0004	0.0202	0.0004	0.002	6.67E-16	78.1	**7.7**	**0.06**
PASIGHAT	239-52	2.01E-04	1.26E-06	21.345	0.2	25.918	0.108	0.016	0.0006	0.0154	0.0006	0.002	2.68E-16	82.4	**7.73**	**0.07**
PASIGHAT	239-53	2.01E-04	1.26E-06	25.286	0.177	28.303	0.122	0.0162	0.0006	0.0101	0.0005	0.002	2.72E-16	89.4	**9.16**	**0.06**
PASIGHAT	239-54	2.01E-04	1.26E-06	558.463	1.568	561.619	1.574	0.0141	0.0002	0.0106	0.0002	0.002	9.96E-16	99.4	**192.19**	**0.51**
PASIGHAT	239-55	2.01E-04	1.26E-06	54.926	0.226	60.037	0.213	0.016	0.0004	0.0172	0.0004	0.002	5.68E-16	91.5	**19.84**	**0.08**
PASIGHAT	239-56	2.01E-04	1.26E-06	49.715	0.559	59.286	0.451	0.0192	0.0013	0.0323	0.0014	0.002	9.05E-17	83.9	**17.96**	**0.2**
PASIGHAT	239-57	2.01E-04	1.26E-06	16.058	0.116	18.934	0.065	0.0158	0.0004	0.0097	0.0003	0.002	4.31E-16	84.9	**5.82**	**0.04**
PASIGHAT	239-58	2.01E-04	1.26E-06	34.137	0.21	76.096	0.182	0.0613	0.0005	0.1419	0.0006	0.006	1.37E-15	44.9	**12.35**	**0.08**
PASIGHAT	239-59	2.01E-04	1.26E-06	1.37	0.158	4.763	0.024	0.035	0.0007	0.0114	0.0005	0.006	3.08E-16	28.9	**0.5**	**0.06**
PASIGHAT	239-60	2.01E-04	1.26E-06	24.124	0.276	28.678	0.163	0.0155	0.0009	0.0153	0.0008	0.002	1.32E-16	84.2	**8.74**	**0.1**
PASIGHAT	239-61	2.01E-04	1.26E-06	75.869	0.4	83.677	0.364	0.0165	0.0006	0.0263	0.0007	0.002	3.27E-16	90.7	**27.34**	**0.14**
PASIGHAT	239-62	2.01E-04	1.26E-06	27.2	0.291	34.874	0.166	0.018	0.0008	0.0259	0.0009	0.002	2.42E-16	78.1	**9.85**	**0.11**
PASIGHAT	239-63	2.01E-04	1.26E-06	71.371	0.305	84.45	0.301	0.0207	0.0005	0.0442	0.0005	0.002	4.30E-16	84.5	**25.73**	**0.11**
PASIGHAT	239-64	2.01E-04	1.26E-06	26.047	0.191	33.039	0.139	0.0179	0.0005	0.0236	0.0005	0.002	4.24E-16	78.9	**9.43**	**0.07**
PASIGHAT	239-65	2.01E-04	1.26E-06	29.889	0.249	32.827	0.17	0.014	0.0008	0.0099	0.0007	0.002	1.92E-16	91.1	**10.82**	**0.09**
PASIGHAT	239-66	2.01E-04	1.26E-06	14.457	0.35	39.493	0.211	0.0297	0.001	0.0847	0.0012	0.002	1.88E-16	36.6	**5.24**	**0.13**
PASIGHAT	239-67	2.01E-04	1.26E-06	1.373	0.176	7.318	0.039	0.0183	0.0007	0.02	0.0006	0.002	2.27E-16	18.8	**0.5**	**0.06**
PASIGHAT	239-68	2.01E-04	1.26E-06	351.222	1.515	352.815	1.516	0.0124	0.0004	0.0053	0.0004	0.002	3.43E-16	99.6	**123.24**	**0.51**
PASIGHAT	239-69	2.01E-04	1.26E-06	48.12	1.189	73.458	0.941	0.0264	0.0025	0.0857	0.0036	0.002	3.65E-17	65.5	**17.39**	**0.43**
PASIGHAT	239-70	2.01E-04	1.26E-06	1.143	0.177	2.882	0.016	0.0153	0.0006	0.0058	0.0006	0.002	2.71E-16	40	**0.41**	**0.06**
PASIGHAT	239-71	2.01E-04	1.26E-06	369.376	1.753	372.688	1.759	0.0145	0.0005	0.0111	0.0005	0.002	2.79E-16	99.1	**129.38**	**0.59**
PASIGHAT	239-72	2.01E-04	1.26E-06	195.022	0.619	200.347	0.621	0.0161	0.0003	0.0179	0.0003	0.002	8.98E-16	97.4	**69.47**	**0.22**
PASIGHAT	239-73	2.01E-04	1.26E-06	18.875	0.133	20.67	0.083	0.0149	0.0005	0.006	0.0004	0.002	3.79E-16	91.4	**6.84**	**0.05**
PASIGHAT	239-74	2.01E-04	1.26E-06	0.867	0.105	5.325	0.019	0.0162	0.0004	0.015	0.0004	0.002	4.63E-16	16.4	**0.31**	**0.04**
PASIGHAT	239-75	2.01E-04	1.26E-06	0.926	0.138	8.15	0.033	0.018	0.0005	0.0244	0.0005	0.002	3.68E-16	11.4	**0.34**	**0.05**
PASIGHAT	239-76	2.01E-04	1.26E-06	75.265	0.252	94.165	0.256	0.0243	0.0004	0.0639	0.0004	0.002	1.12E-15	80	**27.13**	**0.09**
PASIGHAT	239-77	2.01E-04	1.26E-06	36.279	0.168	49.485	0.149	0.0216	0.0004	0.0446	0.0004	0.002	8.99E-16	73.4	**13.13**	**0.06**
PASIGHAT	239-78	2.01E-04	1.26E-06	25.815	0.389	49.736	0.227	0.028	0.0008	0.0809	0.0013	0.002	1.79E-16	51.9	**9.35**	**0.14**
PASIGHAT	239-79	2.01E-04	1.26E-06	177.474	0.89	205.183	0.919	0.063	0.0011	0.0937	0.0012	0.008	2.49E-16	86.5	**63.32**	**0.31**
PASIGHAT	239-80	2.01E-04	1.26E-06	47.968	0.578	54.538	0.423	0.0171	0.0013	0.0222	0.0015	0.002	9.58E-17	88	**17.34**	**0.21**
PASIGHAT	239-81	2.01E-04	1.26E-06	48.279	0.495	52.36	0.395	0.0169	0.0011	0.0137	0.0011	0.002	9.53E-17	92.3	**17.45**	**0.18**
PASIGHAT	239-82	2.01E-04	1.26E-06	36.783	0.377	38.172	0.267	0.0155	0.001	0.0046	0.0009	0.002	1.11E-16	96.4	**13.31**	**0.14**
PASIGHAT	239-83	2.01E-04	1.26E-06	68.031	1.146	110.591	1.096	0.0409	0.002	0.144	0.0034	0.002	5.98E-17	61.5	**24.54**	**0.41**

Blank corrections

Analyses from 3/31/11 to 5/3/11

Mean 4 minute extraction system blanks (moles STP)					Air shot 40Ar/36Ar correction range	
40Ar	39Ar	38Ar	37Ar	36Ar	Min (1σ)	Max (1σ)
1.31×10^{-16}	3.81×10^{-18}	3.90×10^{-19}	2.95×10^{-18}	1.35×10^{-18}	290.3 ± 1.0	302.3 ± 2.0

Analyses from 11/7/11 to 11/15/11

Mean 4 minute extraction system blanks (moles STP)					Air shot 40Ar/36Ar correction range	
40Ar	39Ar	38Ar	37Ar	36Ar	Min (1σ)	Max (1σ)
1.11×10^{-16}	4.97×10^{-18}	2.24×10^{-19}	2.51×10^{-18}	9.05×10^{-19}	304.0 ± 1.2	314.4 ± 1.4

Analyses from 9/14/13 to 10/17/13

Mean 4 minute extraction system blanks (moles STP)					Air shot 40Ar/36Ar correction range	
40Ar	39Ar	38Ar	37Ar	36Ar	Min (1σ)	Max (1σ)
1.49×10^{-16}	2.25×10^{-18}	1.85×10^{-19}	3.15×10^{-18}	8.32×10^{-19}	268.6 ± 1.5	274.7 ± 1.3

Nuclear interference reactions

McMaster 3

40Ar/39Ar from K (1σ)	39Ar/37Ar from Ca (1σ)	36Ar/37Ar from Ca (1σ)
0.027945 ± 0.0014354	> 6 mo. Wait, Ca decayed	> 6 mo. Wait, Ca decayed

McMaster 11

40Ar/39Ar from K (1σ)	39Ar/37Ar from Ca (1σ)	36Ar/37Ar from Ca (1σ)
0.0156325 ± 0.005312	0.000632 ± 0.0000133	0.0002863 ± 7.25528E-6

4.10.6 Model parameters

TABLE A6. One dimensional cooling model parameters

Constants	
Thermal diffusivity (km^2/Myr)	**25**
Temperature at base of model (deg. C)	**875**
Temperature at top of model (deg. C)	**20**
Heat production rate (C/Myr)	**7.5**
Time step (Myr)	**0.2**
Length of Model run (Myr)	**50**
Variables	
Time of stepwise change in exhumation rate (t; in Ma)	**1 to 15**
Increment of t (Ma)	**0.5**
Final exhumation rate (E_f; km/Myr)	**5 to 10**
Increment of Ef (km/Myr)	**1**
Factor change in exhumation rate (xE)	**1 to 20**
Increment of change in xE	**0.5**

CHAPTER 5. Conclusions

5.0 Summary and suggestions for future work

5.0.1 Chapter 2

From the second chapter, I learned that Neogene Siwalik foreland basin units proximal to the Brahmaputra River confluence record a mixed sedimentary provenance from Himalayan sources and Tibetan sources west of the Namche Barwa massif. I interpret this record to indicate that the river has been connected through the eastern syntaxis to Tibetan source rocks since deposition of these units began in the Early or Middle Miocene. While this data do not explicitly exclude the alternative hypothesis that a high-elevation ancestral Yarlung river was captured by a headward eroding Siang River (e.g., Clark et al., 2004), such an event must have occurred prior to deposition of the Lower Siwalik in the Early Miocene and thus is not directly related to increased exhumation of the region in the Pleistocene and Late Pliocene (e.g., Zeitler et al., 2001).

To explain observations of Tibetan zircons in Burmese sedimentary basins prior to this time, I speculate that an additional northern river followed large strike slip fault zones (like the present Yigong, Parlung and Lohit rivers) to join the ancestral Irrawaddy River system. Disconnection from the Irrawaddy may have occurred around ~18 Ma (Robinson et al. 2014), after which this river drained through the Lohit into the foreland basin. Ultimately northward expansion of the Namche Barwa massif led to the capture and reversal of the Parlung River (e.g., Seward and Burg, 2008) greatly expanding the drainage area immediately upstream of the Tsangpo Gorge.

The timing of reversal of the Parlung river remains largely unconstrained. However, I propose that either glacial lowering of divides between the ancestral Yarlung and a north-draining tributary to the Yigong-Parlung-Lohit River, or spill over of a dammed lake on the Parlung River (perhaps from expansion of the Lhagu Glacier near Renwu, China, see Kingdon Ward, 1934) may have first integrated these rivers in the Quaternary. While the detrital zircons from the Upper Siwalik may be consistent with this capture, detailed provenance and detrital thermochronology of Pleistocene terraces near the Siang confluence should help elucidate the Quaternary record of mountain exhumation.

While our provenance data do not explicitly exclude an alternative connection between the Subansiri River and the upper ~2/3 of the present Yarlung River drainage (Cina et al. 2009), this explanation is not required to explain the presence of Gangdese-age zircons in ancestral Brahmaputra deposits in Siwalik units downstream of the Subansiri River. The zircons observed by Cina et al. (2009) near and Bhalukpong, Itanagar may simply have been derived from an integrated Yarlung-Siang-Brahmaputra River like those observed upstream of the Subansiri River confluence near Likabali and Pasighat. Moreover, if the Subansiri River had a substantially greater drainage area at some time in the Miocene I would expect the correspondingly increased erosion to have focused uplift within the Subansiri valley instead of the Tsangpo Gorge. It may be possible that the morphological record of this erosion (i.e., a knickpoint) has disappeared if the river has since readjusted to more recent tectonic uplift, however I would still expect to observe locally increased metamorphic grade, local anatexis or a similar "bullseye" of relatively young cooling ages around the connection point in the upper Subansiri River, as seen in the Tsangpo gorge. Preliminary detrital sampling within the Subansiri drainage (like that of Stewart et al., 2008) might further evaluate this hypothesis directly.

5.0.2 Chapter 3

A well preserved record of moraine and landslide debris in the immediate headwaters to the Tsangpo Gorge are acknowledged to have dammed rivers entering the gorge in the Quaternary (Montgomery et al., 2004; Korup and Montgomery, 2008). In fact, recent examples of such damming occurred on the Yigong River in ~1900 and 2000 (Evans and Delaney, 2011). Such damming may aggraded sediment upstream of the gorge, inhibitingupstream migration of the knickpoint, and focusing erosion within the gorge during the Pleistocene and Late Pliocene.

In the third chapter, I learned that upstream dams episodically (and potentially catastrophically) failed, draining enormous lakes through the Tsangpo Gorge. These megafloods may have generated substantial channel and hillslope erosion by transporting debris from the gorge downstream along the Siang River. I interpret enigmatic sedimentary units up to ~150 m above the modern Siang River as slackwater deposition from these Quaternary megafloods. Detrital zircon U-Pb geochronology from flood deposit samples confirm a mixed Himalayan and Tibetan provenance, and comparison with analyses of modern sediment and known flood deposits from the 2000 Yigong River event demonstrate that megaflood deposits are considerably more enriched in both ~500 Ma Himalayan zircons and Neogene anatectic zircons uniquely attributable to the Namche Barwa massif. I interpret this enrichment to indicate that megafloods preferentially scoured and transported material from massif bedrock within the Tsangpo Gorge, potentially by inducing contemporaneous landsliding on gorge adjacent hillslopes.

I exclude the alternative interpretation of these units as accumulation of alluvium behind landslide dams (c.f., Oiumet et al., 2007) along the Siang River based on the height of these deposits above the river, the relationship of deposits to existing topography, and sedimentological comparison with modern alluvium. Modern alluvium is considerably coarser, clast-supported gravel-cobble conglomerate while flood deposits are typically medium to fine laminated sand. Additionally, the more recent identification of deposits with similar characteristics and elevation in a subsequent field season apparently correlate with hydrodynamically favorable conditions for slackwater depositions (e.g., protected reaches of the river).

Our calculations of shear stresses experienced in the gorge following a catastrophic megaflood are admittedly simplistic and intended to provide a first order estimate of floodwater competence, demonstrating that the enormous discharge resulting from a dam-burst flood could effective transport any landslide debris out of the gorge. Additional, more detailed hydrodynamic modeling of catastrophic flooding, perhaps calibrated with observations from the 2000 Yigong River event could significantly improve estimation of the erosional impact of a single flood event and the capability of floods to deposit sediment up to ~150 meters above the downstream river channel. Furthermore, single grain Hf analyses, bulk Nd analyses, or complimentary zircon fission-track dating of <300 Ma zircons from these deposits might better constrain source region provenance within the Tsangpo gorge specifically.

5.0.3 Chapter 4

In the fourth chapter I revisit Siwalik foreland basin units to extend the exhumation history of the eastern Himalayan syntaxis into the Late Miocene. I complement the existing detrital zircon U-Pb geochronology with detailed stratigraphic measurements, fission-track analyses coupled to previously U-Pb dated detrital zircons and new muscovite $^{40}Ar/^{39}Ar$ thermochronology. I combined lithostratigraphic, magnetostratigraphic and detrital thermochronologic observations to correlate a Siwalik section proximal to the Brahmaputra River confluence to a well dated section along the Kameng River (Chirouze et al., 2012). Thermochronological analyses provide valuable insight to the exhumation history of the syntaxial source area as thermochronologic lag time may indicate attainment of an exhumational steady state (e.g., Bernet and Garver, 2005). In the second chapter I determined the sedimentary provenance of these units to represent deposition from the ancestral Brahmaputra River connected to Tibetan source rocks through the eastern Himalayan syntaxis, and I assume that the youngest cooling ages from detrital thermochronology should reflect rapid cooling of the Namche Barwa massif, if rapid exhumation had begun by the depositional age of these units. In fact, the youngest cooling ages are within the range uniquely attributed to the Namche Barwa massif today, demonstrating that a contribution from a rapidly exhuming source region has been maintained since the Late Miocene.

I interpret the up section decrease in detrital lag time to indicate that exhumation rates have been increasing in the syntaxial source area since the Late Miocene. Using a simple one-dimensional thermal model, I quantitatively constrain the time and magnitude of this increase, assuming the end-member scenario of a simple piecewise change in exhumation rate. Our observations are best matched to models employing a ~5-10 fold increase in exhumation rate between 5-7 Ma.

Lag time estimation is strongly dependent on accurate determination of depositional age. Unfortunately, out limited magnetostratigrpahy in this chapter only permits a tentative correlation from our proximal section to a previously dated section along the Kameng River (Chirouze et al., 2012) and not direct correlation to the Geomagnetic Polarity Reversal Timescale. While I do not anticipate further paleomagnetic analyses to alter the conclusions of this work, additional analyses (potentially paired with detailed biostratigraphy) would permit more robust interpretation of the data, and potentially provide additional, independent constraints on the accumulation rate of these units.

5.1 Synthesis of results

This thesis approached three research objectives: to determine when a river initially drained through the eastern Himalayan syntaxis, to asses the impact of Quaternary glacial damming of drainages upstream of the Tsangpo gorge, and to extend the exhumation history of the syntaxis into the Late Miocene. In the previous section, I summarized the conclusions of the chapters that address each these objectives with an emphasis on where future research can make useful additions. In total, this research demonstrates the potential for and persistence of rapid exhumation within the eastern Himalayan syntaxis.

Our results favor a model by which the eastern Himalayan syntaxis has been progressively denuded by a large, antecedent river system that was capable of sustaining elevated surface erosion rates despite episodic damming in the Quaternary. Simpson (2006) emphasized the importance of sustained rapid exhumation concurrent with tectonic uplift for the development of a positive thermo-mechanical feedback between surface erosion and rock uplift. I propose that an integrated Yarlung-Siang-Brahmaputra

River provided the sustained rapid exhumation necessary to initiate such a feedback in the eastern Himalayan syntaxis in the Late Cenozoic, potentially since the Late Miocene. In particular, our observations of decreasing detrital lag time in Siwalik units proximal to the Brahmaputra confluence indicate that exhumation rates have increased within the syntaxial source region since the Late Miocene, a prediction of this positive feedback (Zeitler et al., 2001; Koons et al., 2013).

I emphasize that it is the antecedent drainage of a large river system that may play the key role in developing this positive feedback during Himalayan uplift by initially maintinaing rapid surface erosion coincident with early rock uplift (Simpson, 2006). While transverse drainages develop in response to tectonic uplift, a relatively large antecedent river may match rates of rock uplift from the onset of uplift, focusing erosion to a specific portion of the orogen that may ultimately lead to the development of a localized thermo-mechanical feedback between surface erosion and rock uplift.

In Chapter 4 I compared similar lag time studies from across the Himalaya. This exercise demonstrated that a history of accelerating exhumation is only observed in foreland basin units proximal to the syntaxes (Cerveny et al., 1988; Bernet and Garver, 2005; and results from chapter 4). Lag time studies from Siwalik units deposited by transverse rivers along the main Himalayan front in Nepal (Bernet et al., 2006; Chirouze et al., 2012b), and the western (Jain et al., 2009) and eastern Indian Himalaya (Chirouze et al., 2013b) all indicate relatively constant, or slightly decelerating exhumation histories. If the constant exhumation across the Main Himalayan indicates attainment of an exhumational steady state (Willet and Brandon, 2002), then the acceleration exhumation of the syntaxes may alternatively be evidence of the development of thermo-mechanical feedbacks in the syntaxes (Zeitler et al., 2001).

Subsequent rock uplift will locally steepen river channels (Whipple and Tucker, 1999) and increase topographic relief until relief approaches an upper limit constrained by rock strength and valley spacing (Montgomery and Brandon, 2002). Both local channel steepening (e.g., Finlayson, 2002; Finnegan et al., 2008) and steep topographic relief (Larsen and Montgomery, 2012) are presently observed within the eastern Himalayan syntaxis potentially indicating that the regional is near the maximum limit of topographic relief. If rock uplift of the region has been increasing since the Late Miocene, such steep topography may have been sustained over a similarly prolonged timescale.

Moreover, increasing rock exhumation may have correspondingly increased the sediment discharge from the eastern Himalayan syntaxis, biasing the downstream sedimentary record toward this region. Presently, nearly half of detrital zircons carried into the foreland basin are sourced from this ~3% of the Yarlung-Siang-Brahmaputra River drainage area (e.g., Stewart et al., 2008; Enklemann et al., 2011) and I might expect a similar biasing as long as rapid exhumation has been present in the syntaxis. Distal sedimentary archives from the Bengal fan record relatively short lag times after ~9 Ma (Copeland and Harrison, 1990) that are not also observed from potential sources along the Main Himalayan front (e.g., White et al., 2002; Szulc et al., 2006). Alternatively, I propose that such young lag times could reflect preferential exhumation from the eastern Himalayan syntaxis.

5.2 Loose ends

The eastern Himalayan foreland is ripe for further research. In contrast to the western and central Himalaya, there are remarkably few published sections with unfortunately few constraints on depositional history. This thesis is both a contribution to this body of work and an aspiration for future contributions. While conducting this work, I explored multiple avenues for alternative projects that, for a variety of reasons remain unresolved. Here I briefly outline several of those projects.

This research has demonstrated the value of coupled geochronological and thermochronological single grain analsyes in the interpretation of detrital lag time. Complimentary detrital geo-thermochronology of Lower Siwalik units along the Siji River, or in nearby tributaries with potentially better exposure (recent road expansions and dam constrcution in Arunachal Pradesh have provided new and interesting road cuts) would be a valuable addition to the research presented in the second and fourth chapters, potentially extending the eastern syntaxial exhumation record through the Middle Miocene. Furthermore, detailed measurement and sampling of thick alluvial terraces with potential intercalated flood deposits near the Siang River confluence (Srivastava et al., 2008) would expand our understanding of Quaternary megafloods, documented and discussed in the third chapter.

While this research focused on the application of specific provenance indicators (e.g., U-Pb age), additional isotopic measurements (Hf and Nd specifically) may also be valuable indicators of sedimentary provenance that could additionally permit differentiation between Gangdese and Bomi-Chayu or Northern Plutonic provinces at the eastern and northern margins of the syntaxis and clarify our interpretation for Late Miocene drainage patterns in the second chapter. Complimentary modal analysis of framework and heavy mineral suites would also be a useful addition to this work, though our preliminary work indicates that this approach is less sensitive than in-situ single-grain analyses.

Constraining the depositional ages of eastern Siwalik units has proven to be challenging, but not impossible with a significant number of analyses and high-resolution temperature steps during thermal demagnetization. Though it will likely require a considerable amount of additional work, detailed magnetostratigraphy (ideally coupled with isotopic analysis like Chirouze et al., 2012 or biostratigraphy) would be an invaluable contribution to the interpretation of these units.

There is surprisingly little published work from within the Lohit River drainage, despite a substantial sediment load and at least four large thrust faults within ~50 km of the mountain front. Our reconnaissance of this portion of the Lohit River demonstrates the significant potential for rapid erosion near the mountain front, which could potentially be investigated with detrital sampling across this reach, as in the approach of Stewart et al. (2008).

5.3 A note on persistence

I end with a brief note on the importance of persistence in scientific work. Some unfortunate complications may have dramatically hindered the completion of this work (e.g., injury, illness, threat, theft, politics and bureaucracy) were it not for the decication and persistence of the researchers involved. I take from these collective experiences that good scientific research may sometimes be only achieved through a thoughtful, diligent, and persistent approach. As I mentioned, this thesis is both a contribution to a broader understanding of the eastern Himalayan syntaxis as well as an aspiration for continued work in the future. To those future researchers, I wish to convey the value of persistent study, for without it I would not have been successful in this work. Good luck.

5.4 References

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