THIN SECTION LABEL ID: 396-U1571A-22R-2-W 75/78-TSB-TS39  
Thin section no.: 
Observer: Sarah Lambart  
Thin section thickness: 30  
Thin section summary: fine-grained glomeroporphyritic basalt with cluster of plagioclase and minor clinopyroxene phenocrysts. The groundmass is mostly composed of plag (50%) and cpx (30%) and clay mineral. The basalt is highly vesicular and the vesicles are filled with clay minerals.

Plane-polarized: 59583701  
Cross-polarized: 59583681

Igneous Petrology

Lithology: moderately plagioclase phyric basalt  
Groundmass grain size (avg.): fine-grained

Texture: holocrystalline  
Grain size distribution: seriate

<table>
<thead>
<tr>
<th>Phenocrysts</th>
<th>Original (%)</th>
<th>Present (%)</th>
<th>Replaced (%)</th>
<th>Size min. (mm)</th>
<th>Size max. (mm)</th>
<th>Shape</th>
<th>Habit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plagioclase</td>
<td>12</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td>subhedral</td>
<td>tabular</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Groundmass</th>
<th>Original (%)</th>
<th>Present (%)</th>
<th>Replaced (%)</th>
<th>Size min. (mm)</th>
<th>Size max. (mm)</th>
<th>Shape</th>
<th>Habit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plagioclase</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>subhedral</td>
<td>elongate</td>
<td></td>
</tr>
<tr>
<td>Clinopyroxene</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>anhedral</td>
<td>equant</td>
<td></td>
</tr>
</tbody>
</table>

Alteration

Alteration intensity: slight  
Total alteration (%): Recrystallization extent: weak

<table>
<thead>
<tr>
<th>Vesicle fill composition</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total vesicle fill</td>
<td>90</td>
</tr>
</tbody>
</table>
THIN SECTION LABEL ID: 396-U1571A-30R-1-W 75/78-TSB-TS40
Observer: Sarah Lambart
Thin section thickness: 30
Thin section summary: sparsely olivine plagioclase phyric fined grain basalt. The groundmass is mostly composed of millimetric plagioclase and submillimetric cpx. The plagioclase phenocrysts (2-3mm) often form clusters. The olivine phenocrysts (1-2mm) are completely replaced by iddingsite. The sample is moderately vesicular with 50% vesicles filled with clay minerals.

Plane-polarized: 59626651  Cross-polarized: 59626631

Igneous Petrology
Lithology: olivine-plagioclase phyric basalt
Texture: holocrystalline
Groundmass grain size (avg.): fine-grained
Grain size distribution: seriate

<table>
<thead>
<tr>
<th>Phenocrysts</th>
<th>Original (%)</th>
<th>Present (%)</th>
<th>Replaced (%)</th>
<th>Size min. (mm)</th>
<th>Size max. (mm)</th>
<th>Shape</th>
<th>Habit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plagioclase</td>
<td>5</td>
<td>4</td>
<td></td>
<td>4</td>
<td></td>
<td>subhedral</td>
<td>tabular</td>
<td>replaced by iddingsite</td>
</tr>
<tr>
<td>Olivine</td>
<td>3</td>
<td>0</td>
<td>100</td>
<td>0.5</td>
<td></td>
<td>subhedral</td>
<td>subhedral</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Groundmass</th>
<th>Original (%)</th>
<th>Present (%)</th>
<th>Replaced (%)</th>
<th>Size min. (mm)</th>
<th>Size max. (mm)</th>
<th>Shape</th>
<th>Habit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plagioclase</td>
<td>40</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
<td>subhedral</td>
<td>elongate</td>
<td></td>
</tr>
<tr>
<td>Clinopyroxene</td>
<td>30</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td>anhedral</td>
<td>tabular</td>
<td></td>
</tr>
<tr>
<td>Fe-Ti oxide</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>anhedral</td>
<td>equant</td>
<td></td>
</tr>
</tbody>
</table>

Alteration
Alteration intensity: moderate
Total alteration (%): 50
Recrystallization extent: strong

Vesicle fill composition
<table>
<thead>
<tr>
<th>Vesicle fill composition</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total vesicle fill</td>
<td>50</td>
</tr>
<tr>
<td>Clay, saponite</td>
<td>100</td>
</tr>
</tbody>
</table>
THIN SECTION LABEL ID: 396-U1571A-30R-3-W 60/62-TSB-TS41
Observer: Sarah Lambart
Thin section thickness: 30
Thin section summary: fine-grained glomeroporphyritic basalt with cluster of plagioclase and minor clinopyroxene phenocrysts. The groundmass is mostly composed of plag (40%) and cpx (30%) and clay mineral. A few plagioclase grains show continuous zoning.

Plane-polarized: 59629551  Cross-polarized: 59629591

Igneous Petrology

| Lithology | plagioclase phyric basalt | Groundmass grain size (avg): | fine-grained |
| Texture | holocrystalline | Grain size distribution: | seriate |

| Phenocrysts | | | | | |
|---|---|---|---|---|
| Plagioclase | 10 | 5 | subhedral | tabular |
| Clinopyroxene | 1 | 2 | anhedral | tabular |

| Groundmass | | | | | |
|---|---|---|---|---|
| Plagioclase | 40 | subhedral | elongate |
| Clinopyroxene | 30 | anhedral | equant |

Alteration

| Alteration intensity: | slight | Total alteration (%): | Recrystallization extent: | weak |
THIN SECTION LABEL ID: 396-U1571A-32R-2-W 31/33-TSB-TS44
Observer: Sarah Lambart
Thin section thickness: 30
Thin section summary: moderately vesicular fine grained basalt. The groundmass is mostly composed of plagioclase and clinopyroxene. Vesicles are empty and alteration is weak.

Plane-polarized: 59684831  Cross-polarized: 59684811

Igneous Petrology
Lithology: basalt  Groundmass grain size (avg.): fine-grained
Texture: holocrystalline  Grain size distribution: seriate

<table>
<thead>
<tr>
<th>Groundmass</th>
<th>Original (%)</th>
<th>Present (%)</th>
<th>Replaced (%)</th>
<th>Size min. (mm)</th>
<th>Size max. (mm)</th>
<th>Shape</th>
<th>Habit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plagioclase</td>
<td>50</td>
<td></td>
<td></td>
<td>1.5</td>
<td></td>
<td>subhedral</td>
<td>elongate</td>
<td></td>
</tr>
<tr>
<td>Clinopyroxene</td>
<td>20</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>anhedral</td>
<td>tabular</td>
<td></td>
</tr>
</tbody>
</table>

Alteration
Alteration intensity: slight  Total alteration (%):  Recrystallization extent: weak
**THIN SECTION LABEL ID:** 396-U1571A-35R-1-W 94/98-TSB-TS43

**Observer:** Sarah Lambart

**Thin section thickness:** 30

**Thin section summary:** strongly altered highly vesicular aphyric basalt. The groundmass crystallinity changes from cryptocrystalline to microcrystalline, highlighting flow texture. The groundmass is mostly composed of plagioclase and clay minerals. The submillimetric vesicles are filled with saponite.

<table>
<thead>
<tr>
<th>Plane-polarized: 59684621</th>
<th>Cross-polarized: 59684641</th>
</tr>
</thead>
</table>

**Igneous Petrology**

**Lithology:** aphyric basalt

**Texture:** aphanitic

| Groundmass grain size (avg.): microcrystalline | Grain size distribution: seriate |

<table>
<thead>
<tr>
<th>Groundmass</th>
<th>Original (%)</th>
<th>Present (%)</th>
<th>Replaced (%)</th>
<th>Size min. (mm)</th>
<th>Size max. (mm)</th>
<th>Shape</th>
<th>Habit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plagioclase</td>
<td></td>
<td></td>
<td></td>
<td>0.5</td>
<td></td>
<td>subhedral</td>
<td>elongate</td>
<td></td>
</tr>
</tbody>
</table>

**Alteration**

**Alteration intensity:** high

**Total alteration (%):**

**Recrystallization extent:** strong

<table>
<thead>
<tr>
<th>Vesicle abundance (%): 50</th>
<th>Vesicle shape: rounded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vesicle min. size (mm):</td>
<td>Vesicle max. size (mm): 2</td>
</tr>
<tr>
<td>Vesicle mode size (mm):</td>
<td>0.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vesicle fill composition</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total vesicle fill</td>
<td>100</td>
</tr>
<tr>
<td>Clay, saponite</td>
<td>100</td>
</tr>
</tbody>
</table>
THIN SECTION LABEL ID: 396-U1571A-39R-2-W 32/34-TSB-TS42

Observer: Sarah Lambart
Thin section thickness: 30
Thin section summary: highly vesicular moderately plagioclase phyric basalt with minor phenocrysts of euhedral olivine (replaced by iddingsite and clay minerals) and anhedral clinopyroxene. The groundmass is microcrystallized and mostly composed of plagioclase and cpx. Strong recrystallization in clay minerals (saponite) is observed. Vesicles are empty and surrounded.

Thin sections

Plane-polarized: 59684541
Cross-polarized: 59684481

Igneous Petrology

Lithology: moderately plagioclase phyric basalt
Texture: holocrystalline
Groundmass grain size (avg.): microcrystalline
Grain size distribution: bimodal

<table>
<thead>
<tr>
<th>Phenocrysts</th>
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<th>Present (%)</th>
<th>Replaced (%)</th>
<th>Size min. (mm)</th>
<th>Size max. (mm)</th>
<th>Shape</th>
<th>Habit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plagioclase</td>
<td>10</td>
<td>3</td>
<td></td>
<td>3</td>
<td></td>
<td>subhedral</td>
<td>tabular</td>
<td></td>
</tr>
<tr>
<td>Olivine</td>
<td>1</td>
<td>0</td>
<td>100</td>
<td>0.6</td>
<td></td>
<td>euhedral</td>
<td>euhedral</td>
<td>replaced by iddingsite (20%) &amp; clay minerals (80%)</td>
</tr>
<tr>
<td>Clinopyroxene</td>
<td>1</td>
<td>0.5</td>
<td></td>
<td>0.5</td>
<td></td>
<td>anhedral</td>
<td>equant</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Groundmass</th>
<th>Original (%)</th>
<th>Present (%)</th>
<th>Replaced (%)</th>
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<th>Shape</th>
<th>Habit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plagioclase</td>
<td>50</td>
<td></td>
<td></td>
<td>subhedral</td>
<td></td>
<td>elongate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinopyroxene</td>
<td>15</td>
<td></td>
<td></td>
<td>anhedral</td>
<td></td>
<td>equant</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Alteration

Alteration intensity: moderate
Total alteration (%): Recrystallization extent: strong