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**MAJOR-OXIDE, MINOR-OXIDE, TRACE-ELEMENT, AND GEOCHEMICAL DATA
FROM ROCKS COLLECTED IN THE BIG DELTA QUADRANGLE, ALASKA IN 2002**

by

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Note: This report (including all analytical data and tables) is available in digital format from the DGGs web site (<http://www.dggs.dnr.state.ak.us>) at no charge. The digital data are available as PDF files and Excel spreadsheets.

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INTRODUCTION

Mineral resource personnel from the Alaska Division of Geological & Geophysical Surveys carried out a geological field survey, including mapping and sampling in the Big Delta quadrangle, Alaska from June 5 to July 31, 2002. The fieldwork provides basic information critical to building an understanding of Alaska's geology and is part of an integrated program of airborne geophysical surveys followed by geological mapping programs. During 2002, 198 rock samples were collected for geochemical trace-element analysis, and 307 rock samples were collected for whole rock (major- and minor-oxides, and petrogenetically important trace-elements) analysis. Location data (in UTM coordinates based on Clark 1866 spheroid, NAD27 datum, UTM zone 6 projection), descriptions, and analytical results for each sample are tabulated in Tables 1, 2, 3, and 4.

ANALYTICAL METHODS

All trace-element geochemical analyses (table 2) collected in 2002 were performed by XRAL Laboratories. Rock samples were crushed so that at least 70 percent of the material passed through a -10 (2 mm) mesh screen. Representative aliquots of 200 grams and 30 grams each were taken using a stainless steel riffle splitter. These samples were then pulverized in a chrome steel ring mill so that 85 percent of the sample passed through a -200 (75 micron) mesh screen. Most trace-element analyses were performed on the 200 gram split while gold, platinum and palladium analyses were performed on the 30 gram representative split.

All gold, platinum, and palladium analyses were done by inductively coupled plasma - mass spectrometry (ICP-MS) following a fire assay fusion. All other trace element geochemical analyses were performed by inductively coupled plasma - atomic emission spectroscopy (ICP-AES) methods after nitric aqua regia digestion. This method of digestion is possibly incomplete for some elements and may result in lower analytical results for certain elements. The elements that may be affected by incomplete digestion as well as analytical methods, and lower and upper detection limits are tabulated in Table 5.

All whole rock analyses (table 4) were performed by XRAL Laboratories. Major and minor element oxides were determined by X-ray fluorescence spectrometry (XRF) following a lithium tetraborate fusion. Trace elements (Ba, Nb, Rb, Sr, Th, U, Y, and Zr) were also analyzed using XRF methods on a pressed powder pellet. Ce was analyzed using ICP-MS. FeO was determined by titration. Analytical detection limits are tabulated in Table 6.

ACKNOWLEDGEMENTS

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Table 1. Location and description of rocks collected for trace-element geochemical analyses in the Big Delta Quadrangle.

Sample Number	UTM E	UTM N	Description
2002AW2A	590002	7142141	Altered, limonite-stained, biotite orthogneiss.
2002AW23A	575903	7180762	Granite cut by quartz veins that locally contain crystals of molybdenite up to 1.5 cm in diameter. Sample was not geochemically assayed.
2002JEA33C	578104	7173493	Biotite-feldspar-quartz gneiss cut by quartz- and magnetite-bearing vein.
2002JEA45A	579159	7177145	Hornblende gneiss with quartz-carbonate veinlets, trace pyrite(?), possible trace tourmaline, trace sericite; veinlets approximately 3 mm thick and slightly anastomosing.
2002JEA45B	579159	7177145	Hornfels/skarn with calcite, chlorite, epidote, quartz, and vuggy iron oxide (after sulfide?).
2002JEA46A	579242	7176978	Select sample of larger cross-cutting veins with quartz, carbonate, trace limonite, trace sulfide, possible secondary biotite; some vuggy leached areas with crystals of quartz(?).
2002JEA47A	579252	7176929	Skarn with garnet, idocrase(?), quartz, limonite stringers, and minor chlorite(?).
2002JEA54A	579465	7175916	Ultramafic rock with trace sulfides (pyrrhotite?).
2002JEA73A	582246	7175158	Ultramafic rock with a few veins of fibrous serpentine; magnetite present.
2002JEA159A	591763	7169887	Gray quartz vein with a few iron oxide-stained vugs; slightly brecciated; iron oxide-stained fractures.
2002JEA204A	574653	7160920	Quartz vein with fine grained, gray sulfide(?); quartz is granular.
2002JEA205A	574760	7160974	Orthogneiss with quartz vein with unknown black mineral (maybe biotite or fine grained sulfides?/possibly arsenopyrite); pyrite is also present.
2002JEA222A	575261	7159656	Iron oxide-stained, vuggy, friable, quartz- and former carbonate?-bearing vein with 1% gray sulfide (arsenopyrite?) and possible tiny gold fleck.
2002JEA223A	575296	7159627	Quartz + white mica + tourmaline vein; parallel or subparallel to foliation
2002JEA250A	580442	7161278	Gray and white siliceous rock, with tiny gray metallic mineral; weak iron staining
2002JEA294C	602752	7165666	Skarn or skarnoid(?): contains carbonate, green diopside(?), quartz, and elongate mineral - possibly tourmaline(?).
2002JEA414B	593325	7181700	Serpentine with 2% chromite(?).
2002JEA419A	592923	7180939	Listwanite: white carbonate and quartz veins in red-weathered serpentine and pyroxene harzburgite; elongate calcite crystals growing toward center of 1-inch-wide vein.
2002JEA419C	592923	7180939	Altered gabbro(?)/ greenstone(?); altered to trace carbonate and rare fine grained, sulfide (pyrite?).
2002JEA420A	592747	7180875	Greenstone.
2002JEA492A	593007	7172478	Hornfels with non-magnetic, silver-colored metallic mineral.
2002JEA494B	593030	7172374	Hornfelsed metasandstone with fine grained pyrite (5%) and other possible sulfides.
2002JEA554A	592654	7152335	Skarn or skarnoid with calcite, garnet, sulfide(?), epidote.
2002JEA554B	592654	7152335	Quartz vein with possible idocrase and rare weathered sulfide(?).
2002JEA577C	578982	7162159	Hornfels/skarn: quartz-rich, foliated; contains epidote, feldspar, and quartz.

Table 1. (continued).

Sample Number	UTM E	UTM N	Description
2002KH50A	559940	7182089	Felsic igneous dike.
2002KH51A	560029	7182062	Skarn containing clinopyroxene- and hornblende-rich layers.
2002JEA620A	567133	7161153	Fault gouge(?) or weathered aplite dike(?); weathered feldspar, Mn oxide, and druzy quartz
2002LF13A	577405	7164227	Serpentinized dunite with 1-3% chromite or magnetite.
2002LF14A	577275	7164214	Olivine-bearing clinopyroxenite that is partially altered to tremolite, talc, serpentine, and secondary opaques.
2002LF15A	577245	7164172	Hornfelsed metagabbro.
2002LF19A	580038	7177894	Hornblende biotite granodiorite with trace molybdenite.
2002LF23A	581932	7178699	Quartzite or hornfels, with locally strong fracturing and brecciation; foliation-parallel and foliation-cutting druzy quartz veins with limonite.
2002LF84A	590220	7178732	Metarhyolite composed of fine-grained pyrite, white mica, and quartz; 3% disseminated, cubic, 0.5-mm-diameter pyrite in streaks parallel to foliation.
2002LF95B	589005	7179110	Iron-stained, strongly-fractured, 1-m-wide quartz vein with 5% cavities, and limonite after pyrite.
2002LF108B	594642	7176941	Pegmatitic gabbro with very coarse-grained hornblende and plagioclase in veins in gabbro; some graphic-like intergrowths.
2002LF114A	595267	7176262	Greenstone with 1% disseminated pyrite.
2002MBW6A	574185	7176711	Rusty orange-brown, vuggy, iron-stained, gossanous, foliation-parallel quartz vein approximately 2-3 inches thick. Abundant limonite in vugs.
2002MBW14A	574703	7176000	Gossanous amphibolite.
2002MBW17A	574921	7175779	Greenish-gray, fine-grained, granular, serpentinite with trace talc and opaques.
2002MBW67A	577867	7170398	Milky quartz vein.
2002MBW75A	586412	7175990	Tan, fine-grained, granular, sandy felsic metatuff; contains foliation-cutting and foliation-parallel, gray and milky quartz veins from 1.5 mm to 1 inch thick.
2002MBW96B	582748	7176896	Tan, altered, porphyritic, metaigneous rock cut by quartz veins with brown acicular radiating sprays of dravite tourmaline and patches of limonite. Meta-igneous rock is hornfelsed, with development of large white mica flakes.
2002MBW99B	586153	7171954	Milky quartz vein (1 inch thick) cutting foliation. Limonite.
2002MBW103A	585816	7171716	Pale and medium gray, color-banded, variably limonite-stained quartzite.
2002MBW107A	585402	7171554	Massive, hornblende gneiss. Contains approximately 2% disseminated magnetite and either pyrite or chalcopyrite (up to 1%).
2002MBW112A	584971	7171519	Very dark green to black, massive serpentinite with local carbonate veins up to 1" wide. Some areas have an almost brecciated look to them with "clasts" of serpentine surrounded by a "matrix" of pale green micaceous talc.

Table 1. (continued).

Sample Number	UTM E	UTM N	Description
2002MBW114A	584715	7171428	Green, very fine-grained, granular, clinopyroxene(?) - bearing ultramafic rock.
2002MBW135B	576884	7166524	Clinopyroxenite
2002MBW142A	576701	7166877	Dark greenish black, coarse-grained, foliated, ultramafic rock. Contains serpentine, talc, clinopyroxene?, and anthophyllite.
2002MBW180A	586677	7171865	Quartz vein with coarse-grained black tourmaline and disseminated limonite. Vein cross-cuts foliation.
2002MBW182A	586449	7171983	Tourmaline-altered schist. Locally gossanous.
2002MBW220A	586744	7171815	Quartz and crystalline brownish-black tourmaline vein with minor limonite.
2002MBW225B	587188	7171860	Fractures (1-3 mm wide) filled with early crystalline quartz and late limonite.
2002MBW226B	587288	7171930	Foliation-parallel quartz veins containing limonite and pyrite in intercrystalline space between quartz crystal faces.
2002MBW254B	586877	7171224	Milky quartz vein with blackish-brown tourmaline and approximately 3% limonite.
2002MBW300A	592164	7167647	Cross-cutting quartz vein.
2002MBW342A	578812	7160177	Milky quartz boulder with sparse limonite on fractures. Possible fault?
2002MBW354A	577667	7159880	Dark forest green, medium-grained, biotite amphibolite(?) or hornblende gneiss with magnetite and epidote.
2002MBW362B	581556	7157007	Milky quartz vein with vuggy areas filled with crystalline quartz and paragenetically later limonite.
2002MBW381B	583442	7158229	Pale orange, very fine-grained, hornfelsed? metatuff with quartz veins up to 1 cm thick. Vuggy areas filled with limonite.
2002MBW397B	582992	7154919	Grit or metatuff cut by quartz (+/- dark gray unknown mineral) veins up to 3 inches wide.
2002MBW397C	582992	7154919	Gray and white, finely color-banded quartz vein that may have either replaced graphitic phyllite or has been sheared.
2002MBW408A	584652	7156019	Milky quartz vein with minor limonite staining on fractures.
2002MBW411A	584936	7156436	Milky quartz vein with fractures and vugs filled with druzy quartz and limonite.
2002MBW424A	605299	7163889	Quartz veins (very planar; 1 cm to 1 inch wide) cut pluton which contains xenoliths of cordierite and biotite. Veining is present in less than 10% of the rocks. Quartz veins contain tan carbonate and minor leached iron-sulfide patches.
2002MBW428A	604755	7164331	Hornfelsed paragneiss.
2002MBW443A	605873	7162386	Planar milky quartz veins up to 1.5 cm wide cutting biotite granite/granodiorite.
2002MBW445A	605714	7162223	Gossanous gneiss and skarn. Contains white acicular wollastonite? and pale green pyroxene?.
2002MBW458A	606873	7161565	Pyrite-bearing hornfels with quartz.
2002MBW461A	607075	7161594	Skarn at contact with pluton.
2002MBW484A	606487	7157681	Hornfelsed paragneiss.

Table 1. (continued).

Sample Number	UTM E	UTM N	Description
2002MBW490A	590099	7142305	Quartz veins with gossanous limonite.
2002MBW514A	578406	7180819	Micaceous quartzite with abundant limonite along foliation and rare quartz veins.
2002MBW515A	578499	7180873	Pale gray, very finely banded skarnoid(?). Locally iron stained.
2002MBW516A	578545	7180882	Pale tan, very fine grained, granular, skarnoid/quartzite(?). Contains tiny (less than 0.2 mm diameter) black specks that are rusting to limonite.
2002MBW533B	593141	7141693	Iron-stained quartz veins with chlorite.
2002MBW536A	592962	7141414	Milky quartz veins between 1 cm and 3 feet wide. Veins cut foliation, +/- contain finely-crystalline chlorite, and locally contain limonite patches.
2002MBW558A	577460	7164236	Ultramafic rock - dunite(?).
2002MBW562A	577204	7164166	Sericite?-altered clinopyroxene gabbro(?). Cut by veins of actinolite(?) and quartz.
2002MBW603A	593907	7181910	Waxy, milk-chocolate-brown, aphanitic serpentinite with trace chalcedony. Fault plane in harzburgite.
2002MBW608A	594066	7181654	Dunite with black chromite in stringers/layers that are about 1 cm thick. The chromite generally occurs in discrete grains that average 2-3 mm in diameter.
2002MBW608B	594066	7181654	Harzburgite.
2002MBW612D	594341	7180855	Silica-carbonate fault-gouge zone about 2 feet wide.
2002MBW621A	594542	7180361	Extremely altered gossan (possibly basalt or ultramafic protolith) composed of limonite, silica (often aphanitic - chalcedonic), trace serpentine(?), an iron-bearing carbonate, and possible Cr-bearing mica. Rock is shattered and brecciated, with carbonate +/- silica as cement. 100-foot-wide fault zone in a small saddle.
2002MBW648A	577209	7160993	Metagranite cut by translucent gray quartz vein.
2002MBW660A	594677	7179738	Greenstone with black chalcocite(?)/chlorite patches and either Cr-bearing mica or malachite.
2002MBW662A	594766	7179610	Intensely quartz-veined metasandstone; milky quartz veins up to 3 inches wide occur in sheeted sets spaced 1 inch to 2 feet apart.
2002MBW667B	594920	7179337	Metagabbro with 2% disseminated pyrrhotite cut by thin mm- to cm-wide quartz veins.
2002MBW704A	592413	7177453	Listwanite with disseminated crystals of black magnetite/chromite(?) (2-3%). Rare tiny green specks could either be malachite or more likely Cr-bearing mica. Carbonate altered but doesn't effervesce. The rock is cut by numerous white veins of magnesite?.
2002MBW712B	587438	7172423	Milky quartz boulders with light iron staining on fracture surfaces; locally may have contained carbonate based on vug shapes.
2002MBW746A	585945	7172727	Tourmaline-, white mica-, and limonite-altered schist.
2002MBW755A	594667	7181651	Chromite bands up to 3 inches thick in dunite.
2002MBW789A	589536	7141120	Orthogneiss cut by quartz veins with vugs variably filled with limonite (former carbonate or other unknown mineral). Veins up to 1.5 inches wide.

Table 1. (continued).

Sample Number	UTM E	UTM N	Description
2002MBW797A	585549	7141132	Orthogneiss with locally intense carbonate alteration.
2002MBW808A	590312	7149634	Basalt dike; very iron stained, and carbonate and white mica altered.
2002MBW817A	578346	7167612	Intrusion breccia: subangular clasts of actinolite amphibolite cemented by a matrix of hornblende gabbro. Contains approximately 2% disseminated pyrite(?) in tiny stringers.
2002MBW824A	577656	7168482	Skarnoid that consists of quartz, epidote, and white mica/chlorite.
2002MBW866A	606409	7157146	White, coarse-grained, pegmatite dike with quartz, white mica, feldspar, and black tourmaline crystals up to 2 inches long.
2002MBW896A	571951	7173491	Calc-silicate gneiss with chlorite-filled microfractures perpendicular to plane of foliation, which are cross-cut by 1-cm-wide quartz veins with limonite after unknown sulfide (equant cubes, possibly pyrite?).
2002MBW901A	572449	7173459	Augen gneiss with milky quartz veins parallel to foliation (generally less than or equal to 1 inch thick). Area contains many boulders of quartz; one very iron-stained quartz boulder contains druzy quartz vugs/microfractures. It also contains a blackish-gray, partially leached out mineral (arsenopyrite?; approximately 1%).
2002MBW902B	572524	7173342	Iron-stained milky quartz vein with brecciated quartz clasts cemented by limonite or perhaps an iron-bearing carbonate. Angular clasts up to 2 inches in diameter.
2002MBW921A	563931	7182685	Iron-stained, crenulated and isoclinally folded metasandstone with disseminated pyrite up to 7%.
2002MBW928A	563300	7181636	Iron-stained, banded metasedimentary rock with layers of very fine-grained, granular, iron-stained quartz interlayered with gray phyllitic partings. Contains layers that were once sulfide(?) but now are disseminated limonite patches.
2002MBW959A	577457	7172802	Micaceous tonalitic orthogneiss. Contains iron sulfide (pyrite?) altering to limonite (up to 1cm patches), magnetite (shiny gray crystals up to 3mm), garnet (up to 1.8cm), biotite, amphibole, and possible staurolite. Very magnetic.
2002MBW960A	577461	7172781	Hornblende-biotite gneiss.
2002MBW984C	600257	7161527	Gabbro cut by plagioclase(?) dikes up to 2 inches thick. Gabbro has alignment of clinopyroxene into subtle bands. Contains approximately 3% disseminated pyrite. White plagioclase? dikes contain tiny mm-sized clinopyroxene(?) and orange garnet(?). Rubble found only over a 40-foot-diameter area; small intrusion(?).
2002MBW1008A	566406	7157467	Iron-stained, locally gossanous, quartz-veined, altered, faulted, gneiss.
2002MBW1011B	566873	7157412	1-foot-wide endoskarn with clinopyroxene and plagioclase in gneiss above granite dike.
2002RL12C	571978	7179110	Quartz vein approximately 10 m wide by 3 m tall.
2002RL18B	574400	7178578	Hornblende granodiorite with iron staining.
2002RL19B	574421	7178390	Quartz vein; 10 cm wide with 1% sulfide.
2002RL20A	574291	7178176	Quartz diorite with sulfides (arsenopyrite).

Table 1. (continued).

Sample Number	UTM E	UTM N	Description
2002RL59C	571763	7173251	Massive quartz vein up to 10 cm thick with tourmaline.
2002RL319B	570723	7183218	Vuggy, brecciated quartz vein with no obvious sulfides.
2002RL485A	564073	7183080	Dark gray, foliated, fine grained, carbonaceous unit with limonite staining.
2002RN11B	573965	7179582	Vuggy quartz-muscovite vein approximately 4 cm wide with trace pyrite.
2002RN21B	572405	7179130	Quartz-feldspar dike up to 0.5 m thick. No obvious sulfides.
2002RN24C	571795	7179465	Very iron-stained gneiss(?) with sulfides(?).
2002RN49B	572632	7173995	Tourmaline-altered, fine-grained aplite dike approximately 2 cm thick. Tourmaline oriented perpendicular to strike of dike.
2002RN52C	572323	7173526	Quartz vein cutting foliation; massive quartz up to 0.3 m thick.
2002RN68B	579079	7179018	Quartz vein 0.5 m thick in granite. Collected vein and adjacent 1 cm of wall rock. Open-space filling but no obvious sulfides or alteration envelope.
2002RN100A	589268	7172256	Quartz vein.
2002RN107B	590132	7173140	Quartz veins approximately 1 cm thick. Possibly tension-gash quartz; vuggy, open-space, with oxidized pyrite(?).
2002RN116A	591132	7174896	Phyllite(?); greenish with pyrite, locally very sheared
2002RN118B	586250	7170754	Quartz veins; vuggy, cross-cut foliation, 1- to 4-cm-wide, no sulfides observed.
2002RN140A	582506	7169643	Clinopyroxenite with randomly-oriented clinopyroxene, and disseminated orange spots (after sulfides?).
2002RN198A	576206	7163537	Clinopyroxenite with less than 5% interstitial plagioclase; equigranular, randomly-oriented crystals.
2002RN202B	577130	7163608	Clinopyroxenite. Stream boulders include layered clinopyroxenite - clinopyroxene gabbro; extends up onto hillside.
2002RN235A	576484	7166213	Clinopyroxenite or hornblendite. Clinopyroxene slightly sheared(?)/foliated with approximately 5% interstitial plagioclase or clinozoisite after plagioclase.
2002RN257A	576882	7164816	Massive, non-foliated clinopyroxenite.
2002RN274C	601098	7162280	Calc-silicate gneiss or skarnoid. Banded clinopyroxene, garnet, no sulfides observed.
2002RN310B	574426	7180345	Quartz vein approximately 4 cm thick, no sulfides observed.
2002RN313B	574740	7180699	Quartz vein, cross-cuts foliation, approximately 4 cm wide, no obvious sulfides but contains chlorite and occasional vugs.
2002RN330C	597421	7165763	Quartz veins greater than or equal to 0.3 m wide, only present as rubble.
2002RN338B	593772	7141765	Quartz veins up to 1 m wide.
2002RN383A	596367	7142462	Quartz vein approximately 3 m thick.
2002RN497A	593487	7172889	Hornfelsed metasandstone. Chip sample taken over 8 m by 8 m area.
2002RN504A	594877	7172996	Banded calc-silicate hornfels.
2002RN506D	595152	7172878	Approximately 8-cm-thick, clinopyroxene-rich skarn adjacent to marble layer.

Table 1. (continued).

Sample Number	UTM E	UTM N	Description
2002RN512A	595224	7171929	Brecciated quartz veins in graphitic quartzite. Sample chips taken from 5 m by 5 m area.
2002RN519B	590734	7141207	Foliation-parallel quartz vein approximately 1 m thick.
2002Z10B	574377	7178928	Iron oxide-stained quartz veins. Iron oxide occurs as disseminated spots and fracture fillings. Veins parallel to foliation are slightly vuggy with euhedral quartz crystals up to 5 mm wide. One float piece with green actinolite spray in vug. Grab sample over 50 feet.
2002Z14A	574973	7178644	Hornfels with weak foliation. Contains approximately 5% disseminated pyrrhotite. Moderate iron oxide stain on fractures.
2002Z24A	577044	7178452	Biotite-hornblende granodiorite with iron oxide stain on fractures. Also several 2 mm spots of dull olive brown mineral that looks like very fine grained marcasite.
2002Z30A	578520	7177506	Hornfelsed schist with minor iron staining(?).
2002Z34A	579080	7177268	Amphibolite cut by randomly-oriented quartz veinlets with weak iron oxide-stain envelope. One quartz vein vug contains oxidized pyrite(?) cubes. Another piece with quartz-tourmaline veinlets
2002Z35B	579176	7177163	Marble/skarnoid with 2-mm- to 2-cm-thick bands of epidote within calcite marble. Select sample of idocrase-rich layers with black metallic specks (very rare). Also contains white fibrous mineral (tremolite?) and honey-yellow-colored band (garnet?).
2002Z57A	584780	7179671	Metatuff(?) with 2-cm-thick quartz vein perpendicular to foliation; vuggy with moderate iron oxide staining.
2002Z66A	583468	7180412	Phyllite with cross-cutting, isoclinally-folded quartz veins; open space with abundant iron oxide.
2002Z71B	583836	7173729	Calcareous quartzite; iron oxide stained on fractures with trace to 1% disseminated pyrite cubes (oxidized) up to 1mm size. Also quartz veinlets with open spaces partially filled with orange limonite.
2002Z72A	583771	7173709	Pyroxenite (dark green/black) mostly altered to fibrous amphibole. No sulfide observed. Randomly-oriented carbonate veinlets in trace amounts.
2002Z73A	583672	7173636	Amphibolite with lenses and disseminated grains of pyrrhotite and pyrite(?) (up to 2 mm in diameter) and occasional red garnet. This sample is a high grade of sulfide with up to 5% pyrrhotite, which is confined to 5-cm-thick layer.
2002Z74A	583492	7173470	Ultramafic rock with disseminated magnetite (approximately 2-3%) and talc.
2002Z92B	578592	7167792	Clinopyroxenite(?) dike(?) with minor talc spots (bright green).
2002Z120B	588868	7164446	Weakly foliated, quartzite with grit (quartz eyes). Weak iron oxide staining and calcite on fractures. Cut by quartz veinlet swarms oblique to foliation. Veinlets occasionally have open space. Select sample of quartz vein-rich, iron oxide-stained rock.
2002Z136A	591212	7174907	Highly iron oxide-stained throughout gabbro, with common anorthosite dikelets. Sample is of most iron oxide-stained and dike-intruded rock.

Table 1. (continued).

Sample Number	UTM E	UTM N	Description
2002Z176B	594697	7165547	Breccia: tan, sandy-textured matrix (dominant) with local clasts of pale green quartzite. Iron oxide stained around open fractures.
2002Z183B	594835	7166215	Milky white quartz veins up to 40 cm wide. Weak iron oxide stain on some fractures. Occasional 1-cm-diameter, tan-brown limonite clots.
2002Z204A	576676	7156749	1-m-wide milky quartz vein with iron oxide on fractures.
2002Z212B	573632	7163088	Milky quartz-tourmaline-feldspar veins in granite. Coarse grained black tourmaline crystals (5%) up to 5 mm in diameter and 0.25 cm long. No sulfides observed.
2002Z212C	573632	7163088	Quartz vein with fine-grained, disseminated, oxidized sulfides. Contains 2-3% black specks (sulfides?), unknown pale green rectangular cross-section mineral, and less than 1% tourmaline(?).
2002Z223C	575209	7164421	Feldspar-quartz veins in granite up to 3 inches wide. No obvious mineralization or iron oxide staining.
2002Z232A	571812	7155761	Ultramafic with chrysotile or tremolite veins up to 3 cm wide. Pyroxene and altered olivine(?) (light brown patches). Abundant Mn- and moderate iron-oxide staining.
2002Z261A	581299	7157553	Metabasalt? dike with disseminated magnetite grains up to 0.5 mm across.
2002Z285A	603420	7162023	Hornfelsed biotite paragneiss with moderate iron oxide staining. Less than 1% white quartz veins that are less than or equal to 1 cm wide with iron oxide staining and occasional spots (sometimes cubic) of limonite (after pyrite?).
2002Z290B	602960	7162514	Vuggy, coarse-grained, quartz vein with interlocking quartz crystals. Largest vein was 5 cm wide with massive to crystalline quartz. Disseminated iron oxide occurs in sample.
2002Z293A	602771	7162885	Possible fault; abundant quartz veins in granite. No sulfides or iron oxide stain.
2002Z300D	601911	7163181	Quartz- and carbonate-matrix breccia with common slickensides. One piece with iron oxide stain. Clasts of fine-grained massive pyrite up to 2 cm in diameter. Pyrite and iron oxide smeared along some slick surfaces on outcrop. Some quartz with disseminated and stringers of pyrite.
2002Z317B	607175	7159394	Leucocratic, fine-grained, equigranular granite, with biotite-cordierite clots (up to 10%).
2002Z339A	586928	7143168	Weathered and chloritized porphyritic plutonic rock - possibly quartz monzonite?; some pieces with iron oxide-stained vugs. Contains 1%, fine grained, irregular to rounded, disseminated pyrite clots.
2002Z347A	587214	7141613	Biotite gneiss/orthogneiss with weak iron oxide stain on foliation surfaces. Some quartz-veined pieces with euhedral quartz-crystal-lined vugs coated with brown limonite.
2002Z365C	577290	7176575	Milky white quartz veins (up to 3 cm wide) with minor iron oxide stain.
2002Z381C	586290	7139695	Milky-white to transparent-glassy quartz veins with iron oxide staining. Select sample of glassy quartz vein with orange iron oxide, including iron oxide-stained schist wall rock.
2002Z389B	585626	7143640	Amphibolite with trace fine-grained pyrite and associated iron oxide stain.

Table 1. (continued).

Sample Number	UTM E	UTM N	Description
2002Z392A	593555	7176764	Microgabbro cut by mm-wide, vuggy quartz veinlets with brown iron oxide stain in vugs and on fracture surfaces. Grab sample collected over 75-foot-diameter area.
2002Z394B	593105	7176783	Highly iron- and Mn-oxide-stained gabbro with fine-grained disseminated magnetite up to 1 mm in diameter. In place rock is vuggy with quartz and iron oxide.
2002Z407B	593025	7176070	Phyllitic quartzite with abundant quartz veinlets and minor iron oxide stain.
2002Z411A	593930	7147880	0.5-mm-wide milky quartz vein with abundant iron-oxide stain. Occasional black lustrous spots within brown-orange iron-oxide (oxidized sulfides?). Small vugs and white chalky feldspar in places. One iron-oxide stained vug with rosettes and blades of black tourmaline.
2002Z414A	593927	7147692	Metagranite with occasional white quartz veinlets that are generally less than 5 mm wide (up to 1 cm wide). Some fractures in rock contain chlorite(?). Dull black coatings may be chlorite, iron oxide and (or) Mn oxide. One vein contains orange iron oxide stain and black iron oxide spots. Quartz veinlets give rock a sense of foliation in hand sample.
2002Z427B	595475	7147137	Skarnoid/calc-silicate gneiss composed of fine grained garnet, chlorite, and pyroxene(?).
2002Z434A	594830	7146898	Biotite orthogneiss cut by pyrite-bearing white quartz veins. Some quartz has a bluish-green halo on vein margins. Weak to moderate iron oxide stain. Possibly some chloritization of orthogneiss.
2002Z442A	595323	7144580	Iron oxide-stained, hornfelsed? augen gneiss; dark gray matrix consisting of magnetite and chlorite.
2002Z465A	579224	7163921	Orthogneiss with fine grained disseminated pyrite.
2002Z465B	579224	7163921	White quartz vein up to 20 cm wide. Vuggy with euhedral quartz crystals partially lining vugs. Also contains wisps and patches of blue-gray quartz (caused by finely disseminated sulfides?). Weak to moderate iron oxide stain.
2002Z467A	579093	7163606	Serpentine- and pyroxene-bearing ultramafic rock with trace, fine grained, pyrite cubes.
2002Z474A	592092	7158869	Vuggy quartz veins with euhedral quartz crystals up to 4 mm long in vugs with minor iron oxide stain.
2002Z484A	590787	7159127	Quartz-grit-bearing metasandstone with thin white quartz veinlets, with oxidized sulfide spots and euhedral quartz crystals.
2002Z516A	601643	7161708	Sillimanite-bearing hornfelsed paragneiss with iron oxide staining and open-space quartz veinlets with euhedral quartz crystals.
2002Z524A	573595	7180316	Granodiorite(?) with thin, gray aplite dikes. No sulfides observed.
2002Z549A	595593	7146566	Quartz monzonite with approximately 1% thin quartz- and iron oxide-bearing veinlets. Veinlets are 1-5 cm wide and are vuggy with subhedral quartz crystals and orange iron oxide spots. Most veins are massive, gray to smoky brown quartz.

Table 1. (continued).

Sample Number	UTM E	UTM N	Description
2002Z550A	595603	7146472	Quartz monzonite cut by thin dikelets (up to 3 cm wide) of granite with miarolitic cavities and Quartz veins (veinlets) with abundant orange iron oxide stain.
2002Z550C	595603	7146472	Quartz-iron oxide breccia that is highly iron oxide stained. Breccia clasts of quartz (with or without ribbon texture), with a matrix of aphanitic to very fine-grained carbonate (brown and orange color; ankerite or siderite). Clasts range from 0.5 to 3 cm across. No sulfides observed. Minor open spaces.
2002Z555B	592475	7143967	Milky white quartz veins. Several vugs with terminated quartz crystals and orange iron oxide stain. One vein with chlorite on vein margins. Veins are 1cm wide.
2002Z559A	592724	7144718	Mylonitized rock with dark layers of chloritized biotite within white layers to blebs of feldspar and quartz. 1% fine grained cubic pyrite disseminated throughout.
2002Z562A	592880	7145346	Iron oxide-stained metagranitic rock or orthogneiss with moderate iron oxide stain on fractures and common iron oxide-lined vugs. Possible fault zone(?).
2002Z565C	584016	7174170	Paragneiss cut by glassy gray quartz veins that are vuggy and have weak to moderate iron-oxide stain (orange). One quartz vein was 7-8 cm wide with vugs, and moderate to strong iron-oxide stain.
2002Z566A	584008	7174360	Ultramafic rock consisting of serpentine, talc, and an orange-brown carbonate (siderite? or ankerite?).
2002Z568D	584146	7174599	White quartz veins perpendicular and parallel to foliation with vugs up to 1.5 cm by 1.5 cm. Moderate to strong iron oxide stain.
2002Z574A	584520	7170068	Finely bedded/foliated marble with foliation-parallel, slightly vuggy quartz veinlets with iron oxide stain and iron oxide cubes (after pyrite?).
2002Z577A	584025	7169236	Banded, calcareous quartzite with moderate iron oxide stain and yellow-green stain.
2002Z599C	599062	7165450	Fault breccia with strong iron oxide stain; quartzite clasts.
2002Z612A	563085	7157439	Quartz vein up to 10 cm wide consisting of interlocking, coarse-grained quartz crystals with minor vugs. Minor iron oxide in vugs, boxworks, locally with iron oxide (pyrite?) cubes. Grab sample collected over 100 foot diameter area.
2002Z627A	575906	7180761	Biotite-hornblende granodiorite cut by 2-cm-wide gray quartz vein with cm-diameter crystals of molybdenite. Select sample of quartz-veined granodiorite with no obvious alteration of vein margins.

Table 2. Trace-element geochemical analyses for rocks collected in the Big Delta Quadrangle. Note: --- = not analyzed; * = duplicate analyses.

Sample Number	Au ppb	Pd ppb	Pt ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %
2002AW2A	6	---	---	<0.2	0.31	12	38	<0.5	<5	0.01	<1	2	7	6.1	0.90	0.21	12.9	1	0.04	190	1	0.01	4	0.01
2002JEA33C	2	---	---	<0.2	1.60	<3	145	<0.5	<5	0.65	<1	3	11	24.2	2.04	0.25	2.7	16	0.77	554	<1	0.07	9	0.04
2002JEA45A	2	---	---	0.4	1.38	<3	67	<0.5	<5	2.03	<1	13	116	31.9	2.06	0.16	14.8	15	1.33	378	<1	0.24	62	0.21
2002JEA45B	3	---	---	0.3	1.44	<3	39	0.6	<5	2.86	<1	4	14	21.9	1.05	0.08	21.7	6	0.16	408	<1	0.03	12	0.07
2002JEA46A	<1	---	---	0.4	1.79	<3	57	<0.5	<5	1.76	<1	11	91	8.3	1.50	0.16	9.8	38	0.93	235	<1	0.13	80	0.14
2002JEA47A	2	---	---	<0.2	2.56	<3	30	<0.5	<5	3.71	<1	5	44	2.6	1.95	0.14	21.1	46	0.44	479	<1	0.03	14	0.02
2002JEA54A	2	4	4.9	0.4	0.61	4	6	<0.5	<5	0.02	<1	66	631	20.8	4.11	<0.01	<0.5	3	11.22	674	<1	0.01	1330	<0.01
2002JEA54A*	3	4	3.8	0.3	0.53	5	5	<0.5	<5	0.02	<1	64	590	21.7	3.91	<0.01	<0.5	2	10.62	675	<1	0.01	1320	<0.01
2002JEA73A	3	5	5.8	0.3	0.41	<3	8	<0.5	<5	0.42	<1	45	1050	13.0	3.42	<0.01	<0.5	<1	9.18	483	<1	0.01	870	<0.01
2002JEA159A	279	---	---	0.7	0.29	35	21	<0.5	<5	<0.01	<1	<1	9	5.1	0.42	0.09	6.4	2	0.01	19	1	0.01	3	<0.01
2002JEA204A	<1	---	---	0.2	3.35	<3	59	2	<5	2.24	<1	9	25	42.1	1.81	0.19	14.0	13	0.34	407	1	0.08	27	0.04
2002JEA205A	3	---	---	<0.2	2.82	<3	187	1.7	<5	1.65	<1	8	42	64.9	1.90	0.29	16.7	15	0.46	190	3	0.12	20	0.05
2002JEA205A*	1	---	---	<0.2	2.79	<3	189	1.7	<5	1.65	<1	8	45	62.8	1.87	0.29	16.4	14	0.45	185	3	0.12	21	0.05
2002JEA222A	<1	---	---	<0.2	4.29	<3	46	2.9	<5	4.39	<1	3	9	13.7	0.59	0.02	12.9	3	0.08	126	2	0.09	8	0.03
2002JEA223A	1	---	---	<0.2	1.35	<3	82	0.8	<5	0.08	<1	4	28	20.5	2.32	0.81	9.5	19	0.49	204	2	0.04	10	0.07
2002JEA250A	2	---	---	0.3	4.86	18	48	1.8	<5	2.62	<1	10	74	21.6	4.15	0.59	25.4	35	1.19	618	2	0.44	30	0.05
2002JEA294C	<1	---	---	<0.2	6.82	<3	32	3.5	<5	5.92	<1	1	5	3.4	0.33	0.05	29.5	5	0.05	101	3	0.16	3	0.03
2002JEA414B	<1	3	5.4	0.5	0.03	<3	<1	<0.5	<5	0.05	<1	102	40	4.3	5.85	<0.01	<0.5	<1	>15	884	<1	0.01	2270	<0.01
2002JEA419A	<1	---	---	0.3	0.08	<3	114	<0.5	<5	3.16	<1	67	200	6.3	3.58	<0.01	<0.5	8	11.51	651	2	0.02	1390	<0.01
2002JEA419C	2	<1	<0.5	0.4	3.08	<3	77	0.9	<5	1.29	<1	27	37	23.3	6.59	0.01	2.9	25	2.60	1360	2	0.08	45	0.06
2002JEA420A	2	<1	<0.5	0.4	2.49	<3	1110	0.6	<5	1.07	<1	25	11	46.9	6.23	0.05	2.1	11	1.62	770	2	0.07	34	0.06
2002JEA492A	3	---	---	<0.2	1.11	9	52	<0.5	<5	0.93	<1	7	7	26.9	1.42	0.09	5.7	1	0.29	120	1	0.18	9	0.14
2002JEA494B	4	---	---	<0.2	1.19	40	45	<0.5	<5	0.58	<1	22	28	112.0	2.33	0.37	15.7	7	0.66	80	3	0.08	13	0.20
2002JEA554A	<1	---	---	<0.2	3.20	<3	131	0.9	<5	4.44	<1	4	22	3.5	1.16	0.05	16.9	10	0.55	292	<1	0.02	14	0.04
2002JEA554A*	<1	---	---	<0.2	2.81	<3	118	0.8	<5	4.04	<1	4	20	3.4	1.08	0.05	17.9	10	0.51	273	<1	0.02	13	0.04
2002JEA554B	<1	---	---	0.3	0.33	<3	28	<0.5	<5	0.06	<1	<1	4	3.2	0.30	0.15	2.3	3	0.03	99	1	0.05	3	0.02
2002JEA577C	4	---	---	<0.2	2.07	19	110	1.2	<5	1.70	<1	3	26	32.7	0.50	0.07	17.3	6	0.07	112	2	0.09	29	0.11
2002JEA620A	<1	---	---	0.5	1.63	12	48	1.3	<5	0.15	<1	16	78	34.3	6.78	0.03	8.3	13	0.15	787	1	0.01	69	0.09
2002KH50A	6	---	---	0.4	3.88	21	74	<0.5	<5	3.17	<1	11	5	39.4	2.35	0.08	6.6	16	0.76	337	1	0.25	2	0.06
2002KH51A	5	<1	<0.5	0.6	3.63	89	699	0.7	<5	2.74	<1	17	23	8.9	8.49	0.43	29.4	20	0.52	1160	2	0.18	16	<0.01
2002LF13A	<1	2	1.0	0.4	0.03	3	2	<0.5	<5	0.05	<1	87	88	0.9	4.17	<0.01	<0.5	1	>15	762	<1	0.01	1410	<0.01
2002LF14A	<1	15	14.4	0.3	0.46	<3	6	<0.5	<5	0.83	<1	28	725	128.0	1.72	<0.01	<0.5	<1	2.53	176	1	0.01	234	<0.01
2002LF15A	4	2	0.9	0.4	11.98	<3	23	0.6	<5	9.08	<1	4	2	0.8	0.64	0.04	2.5	15	0.52	110	2	0.73	17	0.35
2002LF19A	<1	---	---	<0.2	1.17	<3	257	0.7	<5	0.44	<1	4	9	7.1	2.11	0.64	25.7	47	0.50	434	8	0.09	5	0.04

Table 2. (continued).

Sample Number	Au ppb	Pd ppb	Pt ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %
2002LF23A	<1	---	---	<0.2	0.54	25	442	0.6	<5	1.83	7	3	114	157.0	1.38	0.12	12.2	9	0.32	76	13	0.01	33	0.88
2002LF84A	5	---	---	<0.2	0.79	29	38	<0.5	<5	0.02	<1	4	16	2.8	1.44	0.06	22.9	8	0.66	61	<1	0.04	10	0.01
2002LF84A*	5	---	---	<0.2	0.79	26	38	<0.5	<5	0.02	<1	4	16	2.1	1.42	0.07	24.4	8	0.72	62	<1	0.04	11	0.01
2002LF95B	157	---	---	3.8	0.91	249	112	<0.5	<5	2.35	2	8	39	75.3	1.88	0.18	10.6	11	1.23	390	7	0.03	33	0.04
2002LF108B	3	<1	<0.5	0.3	2.37	<3	33	<0.5	<5	1.13	<1	11	37	19.3	2.82	0.07	1.5	7	1.31	437	2	0.08	12	0.02
2002LF114A	<1	<1	<0.5	0.4	2.90	<3	85	0.8	<5	1.29	<1	28	152	25.9	6.39	0.02	10.9	26	2.63	1160	2	0.09	25	0.15
2002MBW6A	7	---	---	0.3	0.95	<3	48	<0.5	<5	0.32	<1	7	12	130.0	3.24	0.05	7.0	10	0.61	241	2	0.04	5	0.08
2002MBW14A	2	---	---	3.0	4.28	236	78	0.9	9	0.07	9	81	227	876.0	14.54	0.16	1.1	52	2.91	965	<1	0.02	112	0.07
2002MBW17A	3	6	6.6	<0.2	0.43	<3	5	<0.5	<5	0.01	<1	47	944	19.7	2.31	<0.01	<0.5	<1	8.99	254	<1	0.01	968	<0.01
2002MBW67A	2	---	---	<0.2	0.03	3	2	<0.5	<5	<0.01	<1	<1	14	7.6	0.41	<0.01	0.9	<1	0.01	24	1	0.02	3	<0.01
2002MBW75A	1	---	---	<0.2	0.41	4	9	<0.5	<5	<0.01	<1	12	16	9.1	1.01	0.01	18.7	5	0.19	455	<1	0.03	26	<0.01
2002MBW75A*	2	---	---	<0.2	0.45	4	8	<0.5	<5	<0.01	<1	11	16	8.7	0.93	0.01	17.8	5	0.17	433	<1	0.03	25	<0.01
2002MBW96B	2	---	---	<0.2	0.65	<3	33	<0.5	<5	0.11	<1	2	9	6.1	1.14	0.20	28.7	15	0.29	132	2	0.03	3	0.06
2002MBW99B	1	---	---	<0.2	0.13	<3	12	<0.5	<5	0.01	<1	2	12	5.9	0.43	0.04	3.4	1	0.04	47	1	0.03	5	<0.01
2002MBW103A	8	---	---	<0.2	0.02	6	15	<0.5	<5	0.02	<1	<1	29	5.0	0.45	0.01	4.8	<1	<0.01	38	2	0.01	5	<0.01
2002MBW107A	2	1	0.8	0.4	1.31	<3	77	<0.5	<5	1.09	<1	18	6	36.1	4.33	0.05	0.5	21	1.38	806	1	0.12	14	0.03
2002MBW112A	5	9	7.9	0.6	0.28	<3	3	<0.5	<5	0.92	<1	75	525	16.2	4.20	<0.01	<0.5	6	>15	1060	<1	0.01	1560	<0.01
2002MBW112A*	5	9	6.9	0.5	0.24	<3	2	<0.5	<5	0.95	<1	73	486	15.3	4.18	<0.01	<0.5	5	>15	1070	<1	0.01	1520	<0.01
2002MBW114A	2	3	5.1	0.2	0.39	<3	4	<0.5	<5	0.06	<1	41	645	2.6	2.20	<0.01	<0.5	1	7.62	396	<1	0.01	713	<0.01
2002MBW135B	1	11	9.0	<0.2	0.41	<3	42	<0.5	<5	0.45	<1	7	138	31.1	0.61	<0.01	0.6	11	0.98	202	<1	0.03	41	0.02
2002MBW142A	2	3	3.3	0.5	0.33	5	<1	<0.5	<5	0.04	<1	90	388	2.8	4.97	0.02	<0.5	7	>15	718	<1	0.01	972	<0.01
2002MBW180A	6	---	---	<0.2	0.04	<3	9	<0.5	<5	<0.01	<1	<1	11	7.1	0.93	0.02	25.4	<1	<0.01	38	1	0.02	4	0.02
2002MBW182A	3	---	---	0.5	0.14	<3	20	<0.5	<5	<0.01	<1	<1	7	25.2	2.28	0.07	43.6	<1	0.01	61	<1	0.04	3	0.03
2002MBW220A	2	---	---	0.3	0.14	4	18	<0.5	<5	0.02	<1	7	7	75.5	1.70	0.07	43.5	<1	0.03	135	8	0.02	13	0.03
2002MBW225B	1	---	---	<0.2	0.90	<3	72	<0.5	<5	0.16	<1	3	5	5.3	1.50	0.29	22.6	9	0.38	188	<1	0.03	4	0.09
2002MBW226B	2	---	---	<0.2	0.06	<3	26	<0.5	<5	0.02	<1	3	12	19.6	0.78	0.03	2.5	<1	0.01	60	2	0.01	4	<0.01
2002MBW226B*	<1	---	---	<0.2	0.06	<3	25	<0.5	<5	0.02	<1	3	10	18.7	0.76	0.03	2.5	<1	0.01	60	2	0.01	4	<0.01
2002MBW254B	24	---	---	<0.2	0.55	4	63	<0.5	<5	0.04	<1	4	13	54.1	2.09	0.19	30.8	4	0.17	97	<1	0.03	13	0.03
2002MBW300A	15	---	---	1.0	0.33	210	32	<0.5	<5	0.03	<1	<1	13	9.2	0.68	0.25	19.4	2	0.02	26	2	0.01	3	0.04
2002MBW342A	<1	---	---	<0.2	0.22	3	2	<0.5	<5	<0.01	<1	3	10	13.6	0.80	<0.01	<0.5	2	0.10	106	<1	0.01	5	<0.01
2002MBW354A	<1	<1	0.7	0.2	2.46	<3	505	0.7	<5	1.71	<1	31	128	34.4	3.62	1.05	3.0	25	2.24	241	2	0.12	171	0.23
2002MBW362B	<1	---	---	<0.2	0.10	5	23	<0.5	<5	<0.01	<1	<1	15	4.7	0.95	0.12	4.1	<1	<0.01	32	2	0.06	3	<0.01
2002MBW381B	1	---	---	<0.2	0.49	5	8	<0.5	<5	0.02	<1	4	38	22.4	1.19	0.03	23.6	4	0.30	137	1	0.07	12	<0.01
2002MBW397B	<1	---	---	<0.2	0.54	<3	5	<0.5	<5	0.02	<1	3	30	8.1	0.88	0.01	6.6	2	0.49	100	1	0.05	7	<0.01

Table 2. (continued).

Sample Number	Au ppb	Pd ppb	Pt ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %
2002MBW397C	<1	---	---	<0.2	0.02	<3	6	<0.5	<5	<0.01	<1	<1	32	3.3	0.17	<0.01	3.4	<1	<0.01	15	2	0.02	3	<0.01
2002MBW408A	1	---	---	<0.2	0.24	<3	3	<0.5	<5	<0.01	<1	3	28	27.7	1.06	0.02	1.3	2	0.23	65	3	0.01	5	<0.01
2002MBW411A	2	---	---	<0.2	0.03	<3	7	<0.5	<5	<0.01	<1	<1	52	18.6	0.59	0.02	2.4	<1	<0.01	27	3	0.01	7	<0.01
2002MBW424A	2	---	---	<0.2	0.45	<3	31	<0.5	14	0.17	<1	2	11	16.0	0.97	0.14	7.6	6	0.15	156	2	0.04	5	0.04
2002MBW428A	2	---	---	<0.2	1.83	<3	58	0.6	<5	0.55	<1	8	39	10.8	3.49	0.25	22.8	31	0.91	705	2	0.03	19	0.01
2002MBW443A	<1	---	---	<0.2	0.45	<3	15	<0.5	<5	0.09	<1	1	13	3.3	0.81	0.11	14.9	9	0.15	120	1	0.03	3	0.01
2002MBW445A	2	---	---	0.6	3.74	<3	21	2.6	<5	12.40	<1	11	27	78.9	2.61	0.03	10.3	18	0.76	631	2	0.08	22	0.03
2002MBW458A	4	---	---	0.4	5.06	<3	7	1.5	<5	4.03	<1	41	44	141.0	4.03	0.04	6.3	7	0.35	174	3	0.20	201	0.24
2002MBW461A	3	---	---	0.6	1.75	<3	33	1.1	<5	12.56	<1	3	18	97.6	1.32	0.15	13.5	10	0.45	147	2	0.03	7	0.05
2002MBW484A	3	---	---	<0.2	2.10	<3	89	<0.5	<5	0.03	<1	5	65	38.8	3.76	0.51	16.9	47	0.59	233	2	0.05	10	<0.01
2002MBW484A*	1	---	---	<0.2	2.09	<3	88	<0.5	<5	0.03	<1	5	68	38.9	3.77	0.51	16.8	47	0.57	229	2	0.05	10	<0.01
2002MBW490A	<1	---	---	<0.2	0.28	<3	34	<0.5	<5	0.03	<1	2	14	8.9	0.76	0.13	7.9	3	0.07	119	3	0.03	4	<0.01
2002MBW514A	<1	---	---	<0.2	1.13	34	359	<0.5	<5	0.01	<1	2	12	65.5	3.08	0.37	28.0	12	0.35	82	6	0.02	20	0.05
2002MBW514A*	<1	---	---	<0.2	1.08	34	334	<0.5	<5	0.01	<1	2	12	63.8	3.03	0.37	26.3	12	0.34	79	7	0.02	19	0.04
2002MBW515A	1	---	---	<0.2	2.05	6	203	0.8	<5	0.93	<1	5	32	26.4	1.68	0.32	21.3	17	0.71	116	2	0.13	15	0.05
2002MBW516A	<1	---	---	<0.2	0.55	<3	44	<0.5	<5	0.24	<1	4	14	71.3	1.71	0.08	13.9	5	0.14	47	2	0.04	6	0.01
2002MBW533B	<1	---	---	<0.2	0.87	4	65	0.5	<5	0.15	<1	5	21	26.8	1.79	0.29	12.4	12	0.42	202	2	0.04	11	0.02
2002MBW536A	<1	---	---	<0.2	1.35	<3	17	<0.5	<5	0.14	<1	6	28	8.8	2.47	0.07	5.5	12	0.99	382	2	0.06	14	0.02
2002MBW558A	1	4	3.7	0.5	0.22	41	2	<0.5	<5	0.09	<1	95	291	12.9	5.30	0.19	<0.5	5	>15	937	<1	0.01	1780	<0.01
2002MBW562A	<1	<1	1.0	0.3	3.46	<3	17	<0.5	<5	2.42	<1	11	29	9.0	0.73	0.09	<0.5	36	1.24	157	1	0.10	48	<0.01
2002MBW603A	<1	---	---	0.4	0.57	<3	10	<0.5	<5	2.09	<1	75	694	9.7	4.71	<0.01	<0.5	<1	>15	736	<1	0.01	1530	<0.01
2002MBW608A	<1	3	3.4	0.5	0.06	<3	<1	<0.5	<5	0.08	<1	96	69	8.4	5.53	<0.01	<0.5	<1	>15	825	<1	0.01	2010	<0.01
2002MBW608B	2	7	7.0	0.4	0.12	<3	<1	<0.5	<5	0.11	<1	83	155	34.6	4.79	<0.01	<0.5	<1	>15	729	<1	0.01	1820	<0.01
2002MBW612D	1	---	---	0.5	0.26	<3	22	<0.5	<5	4.91	<1	60	379	7.3	4.18	<0.01	<0.5	2	14.20	690	1	0.02	1180	<0.01
2002MBW621A	<1	---	---	0.6	0.46	11	69	<0.5	<5	4.68	<1	25	119	47.2	4.03	0.03	1.0	4	1.84	890	2	0.02	81	0.02
2002MBW648A	1	---	---	<0.2	0.73	<3	45	<0.5	<5	0.13	<1	2	6	2.0	1.17	0.40	24.9	59	0.28	124	1	0.05	2	0.04
2002MBW660A	<1	<1	<0.5	0.5	3.25	<3	45	0.8	<5	0.75	<1	34	35	62.4	6.97	0.10	2.0	38	4.32	883	1	0.07	46	0.05
2002MBW662A	2	---	---	<0.2	0.27	3	55	<0.5	<5	0.03	<1	5	10	19.4	1.77	0.32	10.6	<1	0.03	112	2	0.01	12	0.01
2002MBW662A*	2	---	---	<0.2	0.27	4	58	<0.5	<5	0.03	<1	5	11	19.3	1.77	0.33	10.9	<1	0.03	108	2	0.01	13	0.01
2002MBW667B	<1	<1	<0.5	0.4	2.63	<3	120	0.5	<5	1.09	<1	25	14	69.0	5.82	0.03	2.0	26	1.85	777	1	0.08	40	0.05
2002MBW704A	<1	---	---	<0.2	0.01	11	6640	<0.5	5	1.68	<1	65	91	16.0	3.32	<0.01	<0.5	2	14.00	598	<1	0.01	979	<0.01
2002MBW712B	<1	---	---	0.3	0.03	<3	142	<0.5	<5	<0.01	<1	<1	21	15.4	0.67	0.02	<0.5	<1	0.02	39	3	0.01	5	<0.01
2002MBW746A	3	---	---	0.4	0.92	<3	94	<0.5	<5	0.02	<1	2	16	40.4	2.78	0.23	46.7	6	0.30	134	<1	0.05	5	0.03
2002MBW755A	2	2	3.6	<0.2	0.81	<3	2	<0.5	<5	0.01	<1	8	2190	5.7	0.76	<0.01	<0.5	<1	3.88	88	<1	0.01	649	<0.01

Table 2. (continued).

Sample Number	Au ppb	Pd ppb	Pt ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %
2002MBW755A*	1	2	3.2	<0.2	0.80	<3	2	<0.5	<5	0.01	<1	9	2160	5.0	0.77	<0.01	<0.5	<1	3.85	91	<1	0.01	671	<0.01
2002MBW789A	3	---	---	0.2	0.46	<3	47	<0.5	<5	0.35	<1	2	8	10.1	0.85	0.11	39.5	2	0.06	155	1	0.06	4	0.02
2002MBW797A	<1	---	---	<0.2	1.95	<3	118	<0.5	<5	2.01	<1	9	25	7.1	3.63	0.14	22.4	14	1.11	925	<1	0.04	15	0.14
2002MBW808A	<1	---	---	0.4	1.04	<3	156	<0.5	<5	1.15	<1	28	42	25.9	4.76	0.12	21.7	14	1.73	987	<1	0.16	69	0.20
2002MBW817A	2	45	21.5	0.3	0.96	<3	36	<0.5	<5	0.83	<1	12	30	283.0	0.86	0.03	<0.5	3	0.30	81	2	0.11	48	0.07
2002MBW824A	2	---	---	<0.2	3.11	<3	84	1.4	<5	2.79	<1	4	23	7.1	0.81	0.13	22.8	22	0.49	219	<1	0.34	13	0.06
2002MBW866A	57	---	---	<0.2	0.25	<3	8	<0.5	53	0.08	<1	<1	11	4.6	0.34	0.10	0.5	2	0.04	64	1	0.03	3	0.03
2002MBW896A	2	---	---	0.5	1.36	9	55	<0.5	<5	0.74	<1	5	24	11.2	1.14	0.06	5.7	14	0.55	150	<1	0.07	19	0.05
2002MBW901A	3	---	---	<0.2	0.19	635	38	<0.5	<5	<0.01	<1	<1	10	8.5	0.43	0.16	3.7	1	<0.01	19	2	<0.01	<1	<0.01
2002MBW901A*	2	---	---	<0.2	0.20	669	42	<0.5	<5	<0.01	<1	<1	10	8.8	0.47	0.18	4.2	<1	<0.01	21	1	<0.01	1	<0.01
2002MBW902B	<1	---	---	<0.2	0.13	40	12	<0.5	<5	<0.01	<1	<1	17	4.5	0.34	0.09	0.9	<1	<0.01	21	2	<0.01	2	<0.01
2002MBW921A	10	---	---	0.6	2.34	<3	28	1.1	<5	1.57	<1	7	19	96.0	1.40	0.10	7.7	6	0.39	109	2	0.03	25	0.08
2002MBW928A	3	---	---	0.3	0.76	20	330	0.5	<5	<0.01	<1	<1	8	23.9	2.72	0.45	5.7	4	0.10	50	<1	0.01	2	0.09
2002MBW959A	1	<1	<0.5	0.6	4.93	<3	410	<0.5	<5	1.61	9	20	4	166.0	5.33	0.68	15.4	20	2.55	2040	2	0.20	5	0.08
2002MBW960A	<1	6	5.3	0.6	4.54	<3	233	0.6	<5	3.12	1	14	23	21.0	3.23	0.30	5.5	10	1.47	1410	1	0.17	12	0.04
2002MBW984C	<1	<1	<0.5	<0.2	5.91	<3	23	2.1	<5	4.37	<1	5	11	2.8	0.49	0.04	26.5	2	0.08	57	1	0.51	38	0.14
2002MBW1008A	8	---	---	0.7	0.20	770	77	<0.5	<5	0.01	<1	14	11	16.7	2.55	0.19	4.5	<1	<0.01	1720	<1	0.01	13	0.02
2002MBW1011B	1	---	---	0.5	3.88	3	41	2	<5	2.88	<1	6	18	48.7	0.55	0.03	8.5	<1	0.06	148	2	0.09	36	0.10
2002RL12C	<1	---	---	<0.2	0.19	<3	9	<0.5	<5	<0.01	<1	1	20	9.1	0.59	0.06	5.1	2	0.03	38	3	0.03	7	<0.01
2002RL18B	10	---	---	0.2	1.04	4	140	0.5	<5	0.34	<1	1	13	26.2	2.76	0.19	18.0	14	0.48	112	1	0.07	2	0.06
2002RL19B	4	---	---	<0.2	0.15	11	12	<0.5	<5	0.10	<1	2	23	48.6	0.92	0.03	4.1	<1	0.06	77	2	0.02	6	0.02
2002RL20A	2	---	---	0.3	3.20	264	75	0.7	<5	1.36	<1	12	17	27.9	3.97	0.36	9.5	22	1.11	327	2	0.32	4	0.05
2002RL59C	<1	---	---	<0.2	0.62	10	79	<0.5	<5	0.03	<1	3	23	28.7	1.49	0.24	12.1	11	0.33	89	1	0.04	9	0.02
2002RL319B	<1	---	---	0.2	0.20	<3	170	<0.5	<5	0.04	<1	4	8	10.7	0.71	0.09	3.4	<1	0.03	143	<1	0.03	7	<0.01
2002RL485A	10	---	---	0.4	0.26	31	540	<0.5	<5	0.06	<1	1	6	94.8	1.91	0.21	11.1	<1	0.03	19	17	0.01	16	0.07
2002RN11B	11	---	---	1.7	0.88	69	106	<0.5	5	0.45	3	2	7	44.6	1.26	0.30	20.8	19	0.36	322	1	0.03	4	0.03
2002RN21B	1	---	---	<0.2	0.03	6	2	<0.5	<5	0.02	<1	<1	23	4.7	0.28	<0.01	1.1	<1	<0.01	32	2	0.01	4	<0.01
2002RN24C	14	---	---	0.8	3.38	15	193	1.2	30	0.97	<1	37	74	107.0	7.30	0.64	14.6	41	2.14	325	<1	0.10	79	0.29
2002RN49B	<1	---	---	<0.2	0.89	451	44	0.5	<5	0.10	<1	12	16	19.1	1.70	0.21	22.0	9	0.34	167	<1	0.05	22	0.03
2002RN52C	2	---	---	<0.2	0.02	4	3	<0.5	<5	<0.01	<1	<1	10	2.7	0.16	<0.01	1.3	<1	<0.01	28	1	0.02	1	<0.01
2002RN68B	<1	---	---	0.6	0.88	27	120	<0.5	<5	0.26	<1	3	10	5.1	1.61	0.30	20.3	27	0.36	270	28	0.06	3	0.04
2002RN100A	1	---	---	<0.2	0.17	21	26	<0.5	<5	0.02	<1	<1	8	10.4	0.50	0.15	6.5	<1	0.02	23	1	0.01	7	0.02
2002RN107B	<1	---	---	<0.2	0.64	<3	11	<0.5	<5	0.09	<1	2	25	7.3	1.40	0.02	17.7	8	0.40	241	<1	0.05	12	0.01
2002RN116A	5	---	---	<0.2	0.29	<3	765	<0.5	<5	0.05	<1	1	9	54.9	0.84	0.10	5.1	7	0.07	502	<1	0.01	13	0.02

Table 2. (continued).

Sample Number	Au ppb	Pd ppb	Pt ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %
2002RN118B	5	---	---	<0.2	0.14	302	65	<0.5	<5	0.07	<1	1	10	10.4	0.82	0.08	7.1	<1	0.01	145	1	<0.01	11	0.04
2002RN140A	2	7	7.2	0.3	1.04	<3	10	<0.5	<5	0.84	<1	22	227	50.4	1.58	0.02	<0.5	11	1.49	222	<1	0.06	69	0.01
2002RN198A	1	9	7.8	0.3	3.32	<3	23	<0.5	<5	2.45	<1	5	44	126.0	0.51	0.05	<0.5	13	0.58	81	1	0.11	15	<0.01
2002RN202B	<1	2	4.1	<0.2	1.30	<3	21	<0.5	<5	0.83	<1	9	53	30.0	0.76	0.06	<0.5	13	1.23	113	<1	0.08	37	<0.01
2002RN235A	1	<1	<0.5	0.3	2.77	<3	6	<0.5	<5	2.06	<1	19	3	205.0	1.84	0.02	<0.5	12	0.84	146	1	0.24	31	<0.01
2002RN257A	6	23	25.2	0.3	0.37	<3	5	<0.5	<5	0.10	<1	55	362	260.0	2.92	<0.01	<0.5	2	5.40	444	<1	0.01	364	<0.01
2002RN274C	2	---	---	<0.2	6.97	<3	20	1.3	<5	5.65	<1	<1	12	0.8	0.32	0.03	20.1	3	0.08	80	2	0.27	3	0.07
2002RN274C*	1	---	---	<0.2	6.78	<3	19	1.2	<5	5.47	<1	<1	12	1.9	0.30	0.03	18.5	3	0.07	73	2	0.26	3	0.07
2002RN310B	12	---	---	0.4	0.31	210	33	<0.5	13	0.12	<1	1	343	38.4	0.73	0.07	4.8	5	0.11	94	8	0.05	56	<0.01
2002RN313B	3	---	---	<0.2	0.19	<3	7	<0.5	<5	0.06	<1	1	30	7.8	0.51	0.02	0.5	3	0.16	78	2	0.02	4	<0.01
2002RN330C	2	---	---	<0.2	0.02	<3	2	<0.5	<5	<0.01	<1	<1	17	6.3	0.39	<0.01	<0.5	<1	<0.01	33	2	0.01	4	<0.01
2002RN338B	<1	---	---	<0.2	0.22	<3	4	<0.5	<5	0.06	<1	<1	17	3.5	0.52	0.02	1.1	1	0.19	57	1	0.03	3	0.02
2002RN383A	<1	---	---	<0.2	0.06	<3	8	<0.5	<5	0.03	<1	<1	20	3.1	0.25	0.02	4.1	<1	0.02	19	2	0.02	3	0.02
2002RN497A	6	---	---	<0.2	2.98	4	251	0.9	<5	0.18	<1	10	50	25.2	3.25	0.97	35.8	32	1.19	390	1	0.07	28	0.03
2002RN504A	<1	---	---	0.3	2.87	5	134	0.8	<5	0.39	<1	12	48	37.0	3.62	1.09	29.0	42	1.14	195	<1	0.06	38	0.04
2002RN506D	2	---	---	0.4	3.19	<3	29	<0.5	8	4.20	<1	24	41	16.9	8.31	0.06	1.7	41	1.97	810	<1	0.08	55	0.15
2002RN512A	2	---	---	<0.2	0.11	60	56	<0.5	<5	0.06	<1	<1	28	14.2	0.63	0.07	2.8	<1	<0.01	23	7	<0.01	11	0.06
2002RN512A*	4	---	---	<0.2	0.10	59	55	<0.5	<5	0.06	<1	<1	26	13.1	0.62	0.06	2.6	<1	0.01	22	6	<0.01	10	0.05
2002RN519B	5	---	---	0.4	0.42	<3	18	<0.5	<5	0.04	<1	5	34	16.8	0.98	0.07	1.0	6	0.29	120	1	<0.01	16	0.01
2002Z10B	4	---	---	<0.2	0.31	7	47	<0.5	<5	0.12	<1	2	15	69.4	2.04	0.06	2.0	2	0.09	115	2	0.03	5	<0.01
2002Z10B*	4	---	---	<0.2	0.30	8	46	<0.5	<5	0.11	<1	2	16	68.0	1.94	0.06	1.9	2	0.08	113	2	0.03	5	<0.01
2002Z14A	8	---	---	0.4	4.59	57	32	<0.5	<5	4.12	<1	26	59	35.5	1.79	0.07	9.5	17	0.21	412	3	0.17	93	0.13
2002Z24A	2	---	---	<0.2	0.85	115	84	<0.5	<5	0.30	<1	3	11	8.5	1.58	0.22	23.2	24	0.30	262	1	0.06	3	0.03
2002Z30A	7	---	---	<0.2	1.40	42	119	<0.5	72	0.05	<1	3	23	24.5	1.64	0.56	42.0	16	0.51	123	<1	0.03	11	0.04
2002Z34A	2	---	---	<0.2	1.78	5	162	<0.5	<5	2.49	<1	18	142	25.8	2.49	0.30	27.5	20	1.75	398	<1	0.25	96	0.27
2002Z35B	4	---	---	0.4	0.09	6	2	<0.5	<5	13.57	<1	<1	2	0.7	0.27	<0.01	2.7	1	7.76	168	<1	0.01	4	0.10
2002Z57A	<1	---	---	<0.2	1.30	<3	63	<0.5	<5	0.21	<1	8	17	8.9	2.30	0.21	39.2	19	0.61	342	<1	0.04	19	0.04
2002Z66A	29	---	---	<0.2	0.83	17	381	<0.5	5	1.72	<1	8	18	9.2	2.54	0.24	8.4	4	0.38	620	14	0.01	78	0.85
2002Z71B	7	---	---	<0.2	0.14	53	124	<0.5	<5	0.32	<1	3	13	44.7	1.19	0.07	7.5	1	0.11	115	2	0.01	13	0.01
2002Z71B*	5	---	---	0.2	0.13	54	119	<0.5	<5	0.31	<1	3	13	41.9	1.16	0.07	7.5	1	0.10	112	2	0.01	12	0.01
2002Z72A	2	7	9.5	<0.2	0.51	<3	9	<0.5	<5	0.43	<1	6	74	36.2	0.55	0.01	<0.5	4	0.53	87	<1	0.06	19	0.02
2002Z73A	2	<1	<0.5	0.3	2.91	<3	15	<0.5	<5	1.09	<1	27	<1	109.0	3.51	0.17	<0.5	23	2.24	213	1	0.14	4	0.08
2002Z74A	4	7	7.2	0.3	0.34	<3	4	<0.5	<5	0.03	<1	35	754	7.3	2.30	<0.01	<0.5	<1	6.47	382	<1	0.01	674	<0.01
2002Z74A*	3	7	7.9	0.2	0.32	<3	4	<0.5	<5	0.03	<1	34	728	7.8	2.24	<0.01	<0.5	<1	6.17	373	<1	<0.01	650	<0.01

Table 2. (continued).

Sample Number	Au ppb	Pd ppb	Pt ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %
2002Z92B	2	17	21.9	<0.2	0.39	<3	16	<0.5	<5	0.45	<1	4	76	13.4	0.37	0.01	<0.5	2	0.42	103	<1	0.05	17	0.02
2002Z120B	<1	---	---	0.3	1.55	<3	47	<0.5	<5	0.31	<1	6	19	8.3	2.64	0.18	29.9	12	0.98	345	<1	0.02	19	0.03
2002Z136A	1	<1	<0.5	0.4	2.71	<3	114	<0.5	<5	0.71	<1	33	4	225.0	7.37	0.02	<0.5	21	1.20	414	1	0.04	6	<0.01
2002Z176B	<1	---	---	0.4	1.13	<3	56	1.7	<5	0.20	<1	9	26	23.9	1.82	0.23	26.0	20	0.65	209	2	0.03	26	0.03
2002Z183B	2	---	---	<0.2	0.18	7	5	<0.5	<5	0.03	<1	2	32	5.2	0.59	0.01	3.2	2	0.16	90	2	0.01	12	<0.01
2002Z204A	<1	---	---	<0.2	0.02	5	2	<0.5	<5	<0.01	<1	<1	19	7.8	0.33	<0.01	1.4	<1	<0.01	30	2	0.01	8	<0.01
2002Z212B	2	---	---	<0.2	0.91	<3	54	<0.5	<5	0.03	<1	2	24	7.7	1.38	0.58	11.5	15	0.37	181	<1	0.04	5	0.02
2002Z212C	<1	---	---	<0.2	0.54	<3	21	0.6	<5	0.97	<1	<1	7	4.3	0.25	0.02	2.8	<1	0.01	40	<1	0.02	5	<0.01
2002Z223C	1	---	---	<0.2	0.59	<3	26	0.6	<5	1.38	<1	<1	12	5.0	0.30	0.02	2.1	<1	0.02	54	1	0.02	7	<0.01
2002Z232A	2	17	15.5	0.4	0.20	<3	13	<0.5	<5	0.03	<1	106	287	48.3	5.36	<0.01	<0.5	2	>15	632	<1	0.01	1760	<0.01
2002Z261A	3	2	2.4	0.6	2.58	<3	267	0.7	<5	2.68	<1	34	192	74.1	6.65	0.58	12.4	16	2.55	1000	2	0.03	127	0.26
2002Z285A	<1	---	---	0.3	2.56	<3	97	0.9	<5	0.08	<1	17	78	136.0	4.35	0.62	11.0	58	0.81	336	2	0.05	36	<0.01
2002Z290B	1	---	---	<0.2	1.72	4	102	0.7	<5	0.05	<1	5	41	14.5	2.47	0.37	22.9	40	0.47	239	2	0.05	16	0.01
2002Z293A	1	---	---	<0.2	0.74	<3	31	0.5	<5	0.16	<1	3	21	8.6	1.18	0.14	6.8	14	0.40	208	<1	0.03	9	0.04
2002Z293A*	1	---	---	<0.2	0.77	<3	28	0.5	<5	0.17	<1	3	22	8.9	1.21	0.14	7.2	15	0.41	215	<1	0.03	10	0.04
2002Z300D	2	---	---	<0.2	0.99	5	16	1.2	<5	2.93	<1	6	23	7.7	2.70	0.04	38.2	12	0.48	539	2	0.05	11	0.03
2002Z317B	<1	---	---	<0.2	1.53	<3	73	1.2	<5	0.12	<1	6	42	13.3	2.01	0.43	18.2	36	0.46	237	2	0.07	13	0.04
2002Z339A	2	---	---	<0.2	0.97	<3	41	0.6	<5	0.28	<1	6	23	11.7	1.94	0.30	12.7	12	0.54	354	1	0.07	12	0.04
2002Z347A	<1	---	---	<0.2	0.69	<3	55	<0.5	<5	0.06	<1	3	7	3.8	1.05	0.36	22.1	11	0.25	159	<1	0.04	6	0.03
2002Z365C	<1	---	---	<0.2	0.27	14	12	<0.5	<5	0.02	<1	2	22	12.9	0.70	0.09	2.7	6	0.13	65	2	0.03	9	<0.01
2002Z381C	2	---	---	<0.2	0.27	<3	20	<0.5	<5	0.12	<1	2	18	15.0	0.78	0.05	3.1	2	0.14	80	2	0.02	9	0.05
2002Z389B	2	<1	<0.5	0.3	1.51	<3	52	0.5	<5	0.90	<1	11	39	15.7	2.88	0.19	2.7	5	1.13	364	2	0.09	23	0.21
2002Z392A	1	---	---	<0.2	2.59	<3	43	<0.5	<5	1.80	<1	12	38	172.0	2.16	0.05	<0.5	14	1.19	318	<1	0.11	38	0.03
2002Z394B	2	<1	<0.5	0.4	3.08	<3	88	<0.5	<5	2.00	<1	27	<1	25.5	8.25	0.04	3.2	8	1.41	560	2	0.10	3	0.52
2002Z407B	4	---	---	<0.2	0.26	<3	761	<0.5	<5	<0.01	<1	2	9	71.2	0.77	0.09	2.1	3	0.03	51	1	<0.01	26	<0.01
2002Z411A	<1	---	---	0.6	0.20	10	26	<0.5	<5	0.03	<1	2	19	16.5	0.87	0.13	5.1	<1	0.02	64	2	0.01	6	<0.01
2002Z414A	592	---	---	0.3	1.21	<3	101	0.6	91	0.20	<1	3	21	6.8	1.66	0.72	19.4	23	0.55	170	2	0.08	7	0.04
2002Z427B	7	---	---	0.6	3.90	11	31	0.7	<5	3.37	<1	2	22	4.1	1.30	0.12	23.1	6	0.14	292	<1	0.46	9	0.06
2002Z434A	1	---	---	0.5	2.22	<3	169	0.8	<5	0.60	<1	10	45	20.0	2.67	0.50	22.9	14	0.72	288	<1	0.16	22	0.02
2002Z442A	<1	---	---	<0.2	1.03	<3	70	<0.5	<5	0.14	<1	6	21	6.9	2.10	0.31	16.0	15	0.46	304	1	0.06	8	0.03
2002Z465A	3	---	---	0.4	1.44	<3	259	1	<5	0.71	<1	7	41	33.6	1.73	0.16	15.0	13	0.42	617	2	0.05	35	0.12
2002Z465B	2	---	---	<0.2	0.06	<3	17	<0.5	<5	0.13	<1	<1	22	7.7	0.38	0.03	1.4	<1	0.02	121	2	0.01	6	<0.01
2002Z467A	4	4	5.9	0.5	0.17	<3	<1	<0.5	<5	0.10	<1	105	414	39.7	5.52	<0.01	<0.5	6	>15	1150	<1	0.01	1240	<0.01
2002Z474A	1	---	---	0.3	1.75	<3	39	<0.5	<5	0.13	<1	9	9	5.6	2.98	0.25	23.7	22	0.67	509	<1	0.05	7	0.05

Table 2. (continued).

Sample Number	Au ppb	Pd ppb	Pt ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %
2002Z484A	<1	---	---	<0.2	0.94	<3	24	<0.5	<5	0.04	<1	5	14	3.4	1.32	0.08	13.1	7	0.77	158	<1	0.03	11	0.02
2002Z516A	1	---	---	<0.2	6.53	<3	121	2.3	<5	3.93	<1	12	74	68.1	3.47	0.79	25.7	21	1.10	377	1	0.18	22	0.18
2002Z524A	3	---	---	<0.2	1.49	<3	485	<0.5	<5	0.52	<1	5	12	10.3	2.22	0.69	21.5	24	0.62	367	1	0.12	4	0.04
2002Z549A	742	---	---	0.4	1.19	53	180	<0.5	<5	0.41	<1	6	17	6.8	2.04	0.35	19.0	16	0.65	348	3	0.05	6	0.04
2002Z550A	103	---	---	1.5	0.78	555	152	0.9	<5	0.20	3	9	7	21.8	2.65	0.35	33.5	5	0.19	683	2	0.02	7	0.07
2002Z550C	14	---	---	0.7	0.24	49	101	<0.5	<5	1.74	2	1	11	13.9	1.81	0.11	6.5	2	0.04	718	2	<0.01	5	0.01
2002Z555B	<1	---	---	<0.2	0.25	3	24	<0.5	<5	0.07	<1	<1	13	6.2	0.51	0.11	2.1	3	0.10	83	<1	0.02	5	<0.01
2002Z559A	2	---	---	<0.2	1.08	<3	196	<0.5	<5	0.26	<1	6	24	1.8	1.91	0.17	11.3	8	0.91	301	<1	0.04	12	0.04
2002Z562A	3	---	---	<0.2	1.30	<3	42	0.5	<5	0.27	<1	3	28	11.4	1.94	0.22	14.0	21	0.87	181	1	0.06	9	0.04
2002Z565C	3	---	---	<0.2	0.41	<3	229	<0.5	<5	0.11	<1	3	19	15.8	0.78	0.12	2.1	4	0.23	243	2	0.02	16	0.01
2002Z566A	6	3	4.5	0.2	0.20	75	8	<0.5	<5	0.49	<1	36	919	15.6	1.73	<0.01	<0.5	<1	4.49	429	<1	0.01	799	<0.01
2002Z568D	2	---	---	0.5	1.13	<3	724	<0.5	<5	0.34	<1	8	34	77.3	1.68	0.32	7.6	10	0.51	792	2	0.03	36	0.04
2002Z574A	2	---	---	<0.2	0.17	7	102	<0.5	<5	3.05	<1	2	20	16.1	0.43	0.05	6.9	5	0.38	157	<1	<0.01	15	0.02
2002Z574A*	1	---	---	<0.2	0.17	5	101	<0.5	<5	3.00	<1	2	21	15.4	0.41	0.05	7.3	5	0.37	153	<1	<0.01	16	0.02
2002Z577A	<1	---	---	<0.2	0.18	9	102	<0.5	<5	0.93	<1	2	16	10.2	0.30	0.03	3.5	3	0.31	178	1	0.02	16	0.04
2002Z577A*	1	---	---	0.2	0.19	10	110	<0.5	<5	0.97	<1	2	17	9.5	0.30	0.03	3.2	3	0.33	179	1	0.03	16	0.04
2002Z599C	2	---	---	<0.2	0.29	205	12	<0.5	<5	0.01	<1	3	10	31.1	2.63	0.09	2.7	<1	0.03	94	<1	0.01	11	<0.01
2002Z612A	<1	---	---	0.3	0.22	7	17	<0.5	<5	<0.01	<1	1	14	15.2	0.94	0.12	7.0	<1	0.02	41	<1	<0.01	7	<0.01
2002Z627A	<1	---	---	<0.2	0.90	8	185	0.7	<5	0.36	<1	4	7	2.5	1.68	0.47	28.4	24	0.41	299	8	0.07	3	0.04

Table 2. (continued)

Sample Number	Pb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Ti %	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
2002AW2A	9	<5	1.6	<10	2.9	<0.01	3	<10	2.5	10.4	1.7
2002JEA33C	46	<5	4.4	<10	11.1	0.08	35	<10	3.5	173.0	1.0
2002JEA45A	16	<5	5.5	<10	84.1	0.10	59	<10	3.4	52.1	1.6
2002JEA45B	7	<5	1.6	<10	89.4	0.08	15	<10	5.6	20.1	8.6
2002JEA46A	40	<5	1.8	<10	222	0.11	36	<10	2.2	107.0	2.0
2002JEA47A	6	<5	5.6	<10	224	0.12	44	<10	9.7	18.9	5.0
2002JEA54A	7	<5	5.1	<10	1.5	<0.01	23	<10	1.0	47.9	<0.5
2002JEA54A*	6	<5	4.6	<10	1.4	<0.01	20	<10	0.9	45.8	<0.5
2002JEA73A	12	<5	4.3	<10	1.7	<0.01	27	<10	<0.5	28.2	<0.5
2002JEA159A	3	<5	<0.5	<10	2.7	<0.01	5	<10	1.6	3.0	1.5
2002JEA204A	<2	<5	1.7	<10	155	0.05	24	<10	5.4	41.1	0.6
2002JEA205A	4	<5	3.4	<10	137	0.09	34	<10	6.3	41.1	0.6
2002JEA205A*	4	<5	3.3	<10	136	0.09	33	<10	6.1	41.4	0.6
2002JEA222A	<2	<5	<0.5	<10	453	0.03	6	<10	4.8	8.0	0.9
2002JEA223A	7	<5	3.9	<10	15.1	0.11	28	<10	2.7	39.8	0.7
2002JEA250A	3	<5	4.2	<10	212	0.19	72	<10	8.9	50.8	3.3
2002JEA294C	<2	<5	<0.5	<10	594	0.06	4	<10	9.3	26.7	5.0
2002JEA414B	9	<5	3.4	<10	0.6	<0.01	4	<10	<0.5	31.1	<0.5
2002JEA419A	4	<5	5.0	<10	70.6	<0.01	8	<10	<0.5	12.6	<0.5
2002JEA419C	4	<5	9.3	<10	31.7	0.17	232	<10	21.2	58.1	4.5
2002JEA420A	5	<5	7.0	<10	14	0.16	165	<10	17.6	76.7	7.0
2002JEA492A	<2	<5	4.0	<10	90.9	0.03	47	<10	6.7	8.3	1.1
2002JEA494B	11	<5	8.0	<10	12.8	0.07	186	<10	20.4	16.9	1.0
2002JEA554A	2	<5	1.7	<10	74.4	0.05	27	<10	4.4	40.6	3.0
2002JEA554A*	2	<5	1.6	<10	66.5	0.05	25	<10	3.8	40.2	3.3
2002JEA554B	10	<5	<0.5	<10	6.2	<0.01	<2	<10	2.6	3.5	1.6
2002JEA577C	4	<5	0.6	<10	98.2	0.05	12	<10	8.3	13.1	1.1
2002JEA620A	17	<5	7.7	<10	17	<0.01	82	<10	16.3	144.0	0.9
2002KH50A	3	<5	2.2	<10	149	0.07	29	<10	5.2	46.0	11.8
2002KH51A	8	<5	4.4	15	106	0.08	38	<10	11.0	40.6	25.9
2002LF13A	6	<5	2.7	<10	0.9	<0.01	<2	<10	<0.5	14.5	<0.5
2002LF14A	2	<5	4.1	<10	1.6	0.02	51	<10	<0.5	7.6	<0.5
2002LF15A	<2	<5	3.6	<10	554	0.09	33	<10	13.1	4.5	1.6
2002LF19A	7	<5	5.6	<10	19.5	0.19	31	19	12.2	41.5	1.5

Table 2. (continued)

Sample Number	Pb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Ti %	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
2002LF23A	11	12	2.9	<10	44.4	<0.01	248	<10	26.7	218.0	4.8
2002LF84A	3	<5	0.9	<10	3.1	<0.01	10	<10	1.9	5.8	5.7
2002LF84A*	<2	<5	0.7	<10	3.1	<0.01	9	<10	1.5	6.3	5.0
2002LF95B	275	8	2.0	<10	47.9	0.04	19	<10	4.4	227.0	2.1
2002LF108B	<2	<5	3.7	<10	34.1	0.05	144	<10	2.5	33.9	1.2
2002LF114A	9	<5	7.9	<10	67.7	0.15	197	<10	17.2	111.0	7.1
2002MBW6A	14	<5	2.6	<10	6.4	0.02	18	<10	3.9	25.4	1.1
2002MBW14A	776	<5	38.9	<10	12	0.01	370	<10	7.1	577.0	1.7
2002MBW17A	6	<5	3.7	<10	0.8	<0.01	21	<10	<0.5	18.9	<0.5
2002MBW67A	3	<5	<0.5	<10	0.6	<0.01	<2	<10	<0.5	2.6	<0.5
2002MBW75A	29	<5	1.0	<10	1.8	<0.01	7	<10	2.4	25.1	1.6
2002MBW75A*	28	<5	1.0	<10	1.7	<0.01	7	<10	2.2	23.0	1.6
2002MBW96B	11	<5	1.3	<10	1.3	<0.01	5	<10	8.7	27.8	1.6
2002MBW99B	2	<5	<0.5	<10	1.3	<0.01	3	<10	0.9	3.0	<0.5
2002MBW103A	<2	8	<0.5	<10	14.3	<0.01	<2	<10	2.9	6.7	<0.5
2002MBW107A	5	<5	17.5	<10	28.7	0.02	188	<10	5.9	42.0	<0.5
2002MBW112A	6	<5	4.2	<10	8.7	<0.01	13	<10	0.5	28.8	<0.5
2002MBW112A*	6	<5	3.9	<10	8.5	<0.01	11	<10	0.5	28.0	<0.5
2002MBW114A	4	<5	3.1	<10	1.4	<0.01	16	<10	0.8	25.6	<0.5
2002MBW135B	<2	<5	5.0	<10	2.8	0.02	16	<10	1.4	22.1	0.8
2002MBW142A	6	<5	10.5	<10	1	<0.01	8	<10	<0.5	28.9	<0.5
2002MBW180A	3	<5	<0.5	<10	6.2	<0.01	<2	<10	2.4	1.0	1.4
2002MBW182A	43	<5	<0.5	<10	2.7	<0.01	<2	<10	4.0	1.1	0.5
2002MBW220A	5	5	0.7	<10	45	<0.01	<2	<10	6.6	5.4	1.8
2002MBW225B	7	<5	0.7	<10	5.8	<0.01	6	<10	10.6	27.0	0.9
2002MBW226B	<2	<5	<0.5	<10	1.5	<0.01	<2	<10	1.8	1.6	<0.5
2002MBW226B*	<2	<5	<0.5	<10	1.5	<0.01	<2	<10	1.9	1.5	<0.5
2002MBW254B	7	<5	0.9	<10	3	<0.01	7	87	4.1	12.0	<0.5
2002MBW300A	109	5	<0.5	<10	6.3	<0.01	<2	<10	4.2	29.1	2.9
2002MBW342A	6	<5	<0.5	<10	1	<0.01	3	<10	<0.5	13.9	<0.5
2002MBW354A	3	<5	4.4	<10	109	0.18	104	<10	3.5	71.2	0.9
2002MBW362B	7	<5	<0.5	<10	9.4	<0.01	3	<10	<0.5	0.9	3.0
2002MBW381B	3	<5	1.9	<10	4.5	<0.01	19	<10	2.8	14.1	11.1
2002MBW397B	10	<5	0.8	<10	3.7	<0.01	11	<10	3.5	10.9	2.0

Table 2. (continued)

Sample Number	Pb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Ti %	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
2002MBW397C	40	<5	<0.5	<10	6.9	<0.01	<2	<10	<0.5	<0.5	<0.5
2002MBW408A	27	<5	<0.5	<10	0.9	<0.01	3	<10	<0.5	6.5	0.9
2002MBW411A	6	<5	<0.5	<10	1.1	<0.01	<2	<10	<0.5	4.8	1.1
2002MBW424A	4	<5	1.1	<10	4.7	0.01	10	<10	3.8	16.2	1.0
2002MBW428A	15	<5	2.1	<10	18.1	<0.01	38	<10	5.8	62.7	0.8
2002MBW443A	3	<5	0.9	<10	6.7	<0.01	8	<10	3.8	13.9	1.3
2002MBW445A	<2	<5	3.1	<10	288	0.07	30	13	8.3	113.0	2.2
2002MBW458A	9	<5	1.3	<10	255	0.14	23	<10	4.4	40.7	1.1
2002MBW461A	<2	<5	2.1	<10	473	0.10	41	<10	4.6	25.8	5.7
2002MBW484A	13	<5	6.6	<10	10	0.02	61	<10	3.5	44.7	<0.5
2002MBW484A*	12	<5	6.5	<10	9.6	0.02	61	<10	3.5	44.6	<0.5
2002MBW490A	5	<5	<0.5	<10	2.8	<0.01	<2	<10	1.4	8.2	<0.5
2002MBW514A	14	7	1.4	<10	2.5	<0.01	19	<10	3.8	47.5	2.9
2002MBW514A*	14	7	1.3	<10	2.4	<0.01	18	<10	3.7	46.1	2.9
2002MBW515A	10	<5	3.5	<10	73.6	0.08	40	<10	5.1	43.3	1.2
2002MBW516A	9	<5	1.6	<10	21	0.03	9	<10	9.4	14.2	1.4
2002MBW533B	3	<5	1.4	<10	26	0.06	12	<10	3.5	20.1	0.5
2002MBW536A	3	<5	1.8	<10	7.4	0.06	31	<10	2.7	33.6	<0.5
2002MBW558A	8	<5	3.8	<10	0.9	<0.01	3	<10	<0.5	21.9	<0.5
2002MBW562A	<2	<5	2.4	<10	76.9	0.01	17	<10	0.6	10.6	0.8
2002MBW603A	5	<5	8.1	<10	60.5	<0.01	26	<10	0.7	20.9	<0.5
2002MBW608A	8	<5	2.4	<10	0.5	<0.01	5	<10	<0.5	21.1	<0.5
2002MBW608B	7	<5	3.2	<10	0.5	<0.01	10	<10	<0.5	12.3	<0.5
2002MBW612D	5	<5	5.0	<10	147	<0.01	16	<10	<0.5	14.1	<0.5
2002MBW621A	5	<5	21.3	<10	93.4	<0.01	109	<10	7.7	36.7	1.1
2002MBW648A	7	<5	1.6	<10	5.7	0.08	14	<10	4.0	34.0	2.4
2002MBW660A	5	<5	11.3	<10	11.3	0.21	225	<10	16.2	89.5	11.5
2002MBW662A	16	<5	2.6	<10	5.1	<0.01	9	<10	3.9	35.0	6.9
2002MBW662A*	15	<5	2.7	<10	5.2	<0.01	9	<10	4.1	35.1	7.1
2002MBW667B	5	<5	6.4	<10	10.5	0.16	149	<10	14.3	75.4	7.6
2002MBW704A	3	<5	2.8	<10	89.6	<0.01	<2	<10	<0.5	16.3	<0.5
2002MBW712B	4	<5	<0.5	<10	1.8	<0.01	<2	<10	<0.5	1.6	<0.5
2002MBW746A	22	<5	1.9	<10	6.2	<0.01	12	<10	6.2	19.6	<0.5
2002MBW755A	<2	6	1.0	<10	<0.5	<0.01	<2	<10	<0.5	4.5	<0.5

Table 2. (continued)

Sample Number	Pb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Ti %	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
2002MBW755A*	<2	6	1.0	<10	<0.5	<0.01	<2	<10	<0.5	4.2	<0.5
2002MBW789A	11	<5	1.6	<10	36.2	<0.01	<2	<10	5.2	10.1	1.1
2002MBW797A	8	<5	11.1	<10	166	0.02	39	<10	11.1	52.1	1.5
2002MBW808A	3	<5	3.7	<10	53.4	0.09	29	<10	25.0	94.2	27.7
2002MBW817A	<2	<5	1.7	<10	18.3	0.07	18	<10	2.5	8.6	0.7
2002MBW824A	13	<5	1.8	<10	149	0.08	20	<10	6.6	69.1	1.9
2002MBW866A	5	<5	<0.5	<10	7.7	<0.01	<2	<10	<0.5	7.6	0.8
2002MBW896A	5	<5	1.6	<10	41.6	0.08	14	<10	3.0	28.6	0.9
2002MBW901A	16	6	<0.5	<10	1.6	<0.01	<2	<10	1.7	5.5	<0.5
2002MBW901A*	16	<5	<0.5	<10	1.7	<0.01	<2	<10	1.5	6.0	<0.5
2002MBW902B	<2	<5	<0.5	<10	0.9	<0.01	<2	<10	<0.5	2.8	<0.5
2002MBW921A	14	<5	1.5	<10	75.3	0.06	49	<10	4.9	33.4	3.0
2002MBW928A	12	<5	<0.5	<10	7.2	<0.01	<2	<10	3.4	66.8	7.6
2002MBW959A	99	<5	18.4	<10	30.5	0.06	67	<10	13.7	617.0	<0.5
2002MBW960A	44	<5	11.8	<10	35.3	0.09	139	<10	3.1	117.0	<0.5
2002MBW984C	<2	<5	<0.5	<10	279	0.10	7	<10	5.5	15.4	2.7
2002MBW1008A	9	13	<0.5	<10	8.2	<0.01	3	<10	4.0	45.0	<0.5
2002MBW1011B	<2	<5	<0.5	<10	475	0.07	6	<10	3.8	46.3	2.8
2002RL12C	2	<5	<0.5	<10	3.2	<0.01	<2	<10	0.6	5.4	<0.5
2002RL18B	11	<5	2.6	<10	21.5	0.13	43	<10	4.7	11.5	3.5
2002RL19B	3	<5	0.9	<10	1.7	0.03	14	<10	5.5	5.7	1.5
2002RL20A	5	<5	6.5	<10	79.8	0.15	87	<10	3.9	33.3	3.8
2002RL59C	8	<5	1.7	<10	8.9	0.02	15	<10	1.8	19.1	<0.5
2002RL319B	17	<5	1.0	<10	5.3	<0.01	4	<10	1.1	67.4	<0.5
2002RL485A	11	<5	0.6	<10	5	<0.01	34	<10	6.5	37.6	8.4
2002RN11B	52	<5	2.2	<10	12.9	<0.01	13	<10	5.8	115.0	1.6
2002RN21B	<2	<5	<0.5	<10	3.3	<0.01	<2	<10	<0.5	0.7	<0.5
2002RN24C	12	<5	6.1	<10	73.3	0.16	146	<10	4.1	37.6	0.6
2002RN49B	4	<5	2.3	<10	4.1	<0.01	13	<10	6.7	17.8	<0.5
2002RN52C	<2	<5	<0.5	<10	0.7	<0.01	<2	<10	<0.5	<0.5	<0.5
2002RN68B	13	<5	3.4	<10	12	0.08	23	<10	8.9	26.9	1.3
2002RN100A	6	<5	<0.5	<10	4	<0.01	<2	<10	2.0	51.1	0.6
2002RN107B	<2	<5	1.7	<10	6.4	<0.01	15	<10	2.0	11.2	2.3
2002RN116A	4	<5	1.5	<10	8.5	<0.01	5	<10	2.6	23.1	2.2

Table 2. (continued)

Sample Number	Pb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Ti %	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
2002RN118B	4	<5	1.2	<10	3	<0.01	5	<10	3.5	23.2	1.4
2002RN140A	<2	<5	4.7	<10	4.2	0.04	32	<10	2.0	15.8	0.6
2002RN198A	<2	<5	4.4	<10	125	0.01	19	<10	0.8	7.6	0.5
2002RN202B	<2	<5	3.7	<10	15.4	<0.01	16	<10	<0.5	10.0	<0.5
2002RN235A	<2	<5	11.2	<10	63.4	0.09	128	<10	2.7	11.6	0.9
2002RN257A	4	<5	5.4	<10	1.1	<0.01	33	<10	<0.5	17.3	<0.5
2002RN274C	<2	<5	0.9	<10	877	0.07	13	<10	4.1	8.1	2.7
2002RN274C*	<2	<5	0.8	<10	861	0.06	11	<10	3.7	7.8	2.5
2002RN310B	14	<5	1.1	<10	6.5	0.02	6	<10	1.9	11.8	0.6
2002RN313B	<2	<5	<0.5	<10	1.9	<0.01	5	<10	0.6	4.9	<0.5
2002RN330C	<2	<5	<0.5	<10	0.8	<0.01	<2	<10	<0.5	1.3	<0.5
2002RN338B	<2	<5	0.7	<10	3.1	<0.01	5	<10	1.3	4.4	<0.5
2002RN383A	<2	<5	<0.5	<10	3.2	<0.01	<2	<10	0.7	0.7	<0.5
2002RN497A	15	<5	5.1	<10	15.2	0.03	40	<10	7.6	60.8	2.3
2002RN504A	7	<5	5.0	<10	27	0.15	50	<10	6.8	53.1	3.0
2002RN506D	3	<5	1.1	<10	77.6	0.06	43	<10	5.2	23.8	5.7
2002RN512A	19	5	<0.5	<10	35	<0.01	22	<10	2.6	38.6	2.0
2002RN512A*	20	<5	<0.5	<10	32	<0.01	22	<10	2.3	35.5	1.8
2002RN519B	<2	<5	1.0	<10	1.1	<0.01	12	<10	0.7	12.2	1.0
2002Z10B	9	<5	1.1	<10	3.5	0.02	18	<10	1.5	9.3	1.1
2002Z10B*	9	<5	1.1	<10	3.5	0.02	17	<10	1.4	8.9	1.0
2002Z14A	2	<5	2.0	<10	146	0.10	31	<10	4.1	23.5	9.2
2002Z24A	11	<5	4.1	<10	14.9	0.06	15	<10	15.8	26.9	7.3
2002Z30A	12	6	3.0	<10	9.3	0.01	21	<10	6.3	25.4	<0.5
2002Z34A	9	<5	5.1	<10	132	0.09	65	<10	4.8	43.3	0.9
2002Z35B	3	<5	<0.5	<10	211	<0.01	2	<10	3.8	28.6	1.2
2002Z57A	4	<5	1.3	<10	25.4	<0.01	13	<10	5.0	41.6	3.6
2002Z66A	7	<5	1.1	<10	101	<0.01	84	<10	16.5	28.1	8.8
2002Z71B	57	18	0.7	<10	6	<0.01	6	<10	2.3	14.2	1.2
2002Z71B*	54	18	0.7	<10	5.7	<0.01	6	<10	2.2	13.8	1.4
2002Z72A	<2	<5	2.8	<10	5.2	0.03	16	<10	0.8	6.0	<0.5
2002Z73A	<2	<5	7.8	<10	32.4	0.04	106	<10	3.0	21.6	<0.5
2002Z74A	4	<5	2.7	<10	0.7	<0.01	18	<10	0.6	21.4	<0.5
2002Z74A*	4	<5	2.5	<10	0.6	<0.01	17	<10	0.5	20.5	<0.5

Table 2. (continued)

Sample Number	Pb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Ti %	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
2002Z92B	<2	<5	2.0	<10	5.6	0.04	11	<10	2.2	8.6	0.5
2002Z120B	7	<5	1.3	<10	16.1	<0.01	16	<10	5.6	46.6	11.0
2002Z136A	6	<5	6.1	<10	14.1	0.10	762	<10	0.7	44.8	<0.5
2002Z176B	3	<5	2.6	<10	25.8	<0.01	24	<10	9.6	25.4	3.3
2002Z183B	<2	<5	0.6	<10	3.6	<0.01	10	<10	1.0	5.6	<0.5
2002Z204A	<2	<5	<0.5	<10	0.6	<0.01	<2	<10	<0.5	0.7	0.6
2002Z212B	6	<5	3.4	<10	6.9	0.10	25	<10	2.5	26.7	2.6
2002Z212C	<2	<5	<0.5	<10	42.4	0.01	<2	<10	1.7	4.8	0.7
2002Z223C	<2	<5	<0.5	<10	54.8	0.01	<2	<10	2.5	6.9	<0.5
2002Z232A	8	<5	4.5	<10	1.5	<0.01	7	<10	0.5	26.7	<0.5
2002Z261A	6	<5	4.4	<10	147	0.16	147	<10	3.4	89.7	3.4
2002Z285A	15	<5	6.8	<10	41.5	0.04	74	<10	2.6	67.2	<0.5
2002Z290C	11	<5	3.8	<10	22	0.01	36	<10	4.2	47.0	<0.5
2002Z293A	6	<5	2.5	<10	6.5	0.06	26	<10	5.4	23.9	<0.5
2002Z293A*	6	<5	2.7	<10	7	0.06	27	<10	5.8	24.5	<0.5
2002Z300D	9	<5	4.7	<10	60.9	0.08	44	<10	34.4	37.5	5.1
2002Z317B	9	<5	4.0	<10	15.6	0.04	33	<10	6.3	39.3	<0.5
2002Z339A	10	<5	3.1	<10	24.9	0.06	24	<10	8.0	27.8	1.3
2002Z347A	10	<5	1.1	<10	5	<0.01	6	<10	5.3	17.0	2.3
2002Z365C	3	<5	<0.5	<10	2.6	<0.01	5	<10	0.6	6.1	<0.5
2002Z381C	<2	<5	<0.5	<10	6.7	<0.01	<2	<10	1.1	8.4	<0.5
2002Z389B	2	<5	2.9	<10	17.7	0.13	50	<10	4.3	28.7	1.7
2002Z392A	<2	<5	4.3	<10	15.7	0.12	76	<10	4.4	23.6	1.5
2002Z394B	7	<5	2.3	<10	21.6	0.07	86	<10	30.1	75.0	<0.5
2002Z407B	4	<5	1.3	<10	4.5	<0.01	6	<10	1.0	53.8	3.4
2002Z411A	17	11	0.7	<10	1.7	<0.01	2	<10	1.7	32.2	1.4
2002Z414A	3	<5	5.6	<10	10.6	0.08	35	78	11.3	14.2	7.6
2002Z427B	7	<5	1.7	<10	287	0.07	20	<10	8.7	31.2	3.0
2002Z434A	7	<5	5.6	<10	28.6	0.12	44	<10	5.9	46.7	0.8
2002Z442A	6	<5	4.2	<10	11.1	0.03	20	<10	9.1	26.4	1.8
2002Z465A	19	<5	3.1	<10	75	0.03	43	<10	8.4	51.1	2.3
2002Z465B	7	<5	<0.5	<10	5.5	<0.01	<2	<10	0.7	3.0	1.2
2002Z467A	7	<5	7.7	<10	1.4	<0.01	8	<10	<0.5	34.1	<0.5
2002Z474A	18	<5	5.4	<10	3	<0.01	50	<10	9.0	51.7	1.4

Table 2. (continued)

Sample Number	Pb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Ti %	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
2002Z484A	5	<5	0.9	<10	2	<0.01	10	<10	1.8	16.0	3.3
2002Z516A	3	<5	13.3	<10	202	0.19	76	<10	19.6	49.0	<0.5
2002Z524A	9	<5	3.9	<10	26.3	0.20	44	<10	8.1	40.6	2.5
2002Z549A	21	<5	4.2	<10	12.4	0.14	41	119	9.5	61.0	10.9
2002Z550A	53	18	5.6	<10	7.1	<0.01	15	<10	13.5	115.0	5.0
2002Z550C	70	1110	1.5	<10	11.9	<0.01	4	<10	6.1	135.0	1.5
2002Z555B	3	<5	0.5	<10	4.6	0.02	3	<10	1.8	7.2	0.5
2002Z559A	<2	<5	3.7	<10	18.5	0.05	20	<10	8.5	24.8	1.1
2002Z562A	8	<5	5.5	<10	17.4	0.08	31	<10	9.8	46.1	1.7
2002Z565C	<2	<5	1.4	<10	6	0.04	22	<10	2.0	12.3	<0.5
2002Z566A	3	<5	3.1	<10	20.5	<0.01	8	<10	<0.5	11.3	<0.5
2002Z568D	2	<5	3.7	<10	13	0.08	80	<10	4.6	43.8	<0.5
2002Z574A	5	<5	1.2	<10	34.4	<0.01	8	<10	6.0	44.1	<0.5
2002Z574A*	5	<5	1.4	<10	33	<0.01	8	<10	6.0	43.5	<0.5
2002Z577A	6	<5	0.8	<10	17.4	0.02	8	<10	4.2	16.8	0.8
2002Z577A*	6	<5	0.8	<10	17.7	0.02	8	<10	3.9	17.6	0.8
2002Z599C	11	<5	<0.5	<10	1.3	<0.01	11	<10	0.9	34.7	0.6
2002Z612A	25	<5	1.5	<10	3.1	<0.01	7	<10	1.2	46.2	<0.5
2002Z627A	6	<5	3.7	<10	15.8	0.14	30	<10	7.7	30.7	2.7

Table 3. Location and description of rocks collected for major-oxide, minor-oxide, and trace-element analyses in the Big Delta Quadrangle.

Sample Number	UTM E	UTM N	Sample Description
2002AW28A	577039	7180566	amphibolite
2002AW32B	576971	7180776	amphibolite
2002JEA3A	576685	7173278	amphibolite
2002JEA6C	577391	7173079	amphibolite
2002JEA11C	578749	7172359	amphibolite
2002JEA39A	579266	7173787	amphibolite
2002JEA56A	579623	7175415	amphibolite
2002JEA67A	583410	7174621	amphibolite
2002JEA79B	579996	7166548	amphibolite
2002JEA81A	580033	7166593	amphibolite
2002JEA89A	580271	7167998	amphibolite
2002JEA96A	581138	7165401	hornblende gneiss
2002JEA104A	581437	7165654	amphibolite
2002JEA108A	581725	7165923	amphibolite
2002JEA111A	582003	7166367	amphibolite
2002JEA129A	591017	7175235	gabbro
2002JEA129B	591017	7175235	granite
2002JEA164A	587795	7175891	metagrit
2002JEA164B	587795	7175891	metagraywacke
2002JEA165A	587745	7175922	metabasalt
2002JEA167C	592918	7173287	phyllite
2002JEA170A	592837	7173111	metabasalt
2002JEA173D	592646	7172941	basalt/metabasalt
2002JEA175A	592446	7172769	metabasalt
2002JEA181B	592120	7171569	metabasalt
2002JEA188B	577933	7157741	amphibolite
2002JEA196A	577118	7158233	amphibolite
2002JEA199A	576433	7158729	granitic orthogneiss
2002JEA227B	573101	7153655	metagabbro
2002JEA234A	573937	7154239	amphibolite
2002JEA243A	579724	7160635	metasandstone
2002JEA257B	580299	7161554	metashale
2002JEA266B	580353	7162203	amphibolite
2002JEA294D	602752	7165666	granite
2002JEA301A	602563	7167085	granitic orthogneiss
2002JEA315A	601860	7165620	granite
2002JEA319A	601051	7165743	granodiorite
2002JEA336A	598664	7162900	amphibolite
2002JEA357A	584547	7161384	phyllite
2002JEA374C	581349	7163372	amphibolite
2002JEA375A	581258	7163402	amphibolite
2002JEA385A	579036	7172638	amphibolite
2002JEA390A	579645	7172948	amphibolite
2002JEA401B	579428	7171761	amphibolite
2002JEA413D	593493	7181816	greenstone
2002JEA506A	589788	7172723	metadiorite
2002JEA513A	590717	7171816	metabasalt
2002JEA519A	585488	7144319	trondhjemitic augen gneiss

Table 3. (continued)

Sample Number	UTM E	UTM N	Sample Description
2002JEA525A	585520	7145083	microgabbro
2002JEA529A	585366	7145513	metagranite
2002JEA576A	578919	7162139	granitic orthogneiss
2002JEA595A	578597	7162953	amphibolite
2002JEA602A	599400	7167575	amphibolite
2002JEA615A	566400	7161641	paragneiss
2002JEA622A	567497	7161023	paragneiss
2002JEA625A	567903	7161114	amphibolite
2002JEA629A	568417	7160989	gneiss
2002JEA637A	569754	7161756	paragneiss
2002KH55A	560607	7181719	quartz diorite
2002LF9A	577916	7164865	amphibolite
2002LF15A	577245	7164172	anorthosite
2002LF35A	594022	7177255	metadiabase
2002LF37A	594036	7177748	metabasalt
2002LF78A	591509	7178423	metabasalt
2002LF97A	585958	7178873	metasandstone
2002LF108C	594642	7176941	metagabbro
2002LF115A	595350	7176164	metabasalt
2002MBW1A	574106	7176822	amphibolite
2002MBW9A	574270	7176622	amphibolite
2002MBW30A	575545	7174779	amphibolite
2002MBW49C	575866	7172216	amphibolite
2002MBW78A	586050	7175860	metarhyolite
2002MBW84A	585355	7175760	metarhyolite
2002MBW86A	585110	7175917	metarhyolite
2002MBW97A	582560	7177675	granite
2002MBW106A	585487	7171592	amphibolite
2002MBW113A	584860	7171510	amphibolite
2002MBW116A	584548	7171454	amphibolite
2002MBW119A	583689	7171328	amphibolite
2002MBW122A	582850	7171291	amphibolite
2002MBW153A	576633	7167973	metagranite
2002MBW176A	586808	7171769	amphibolite
2002MBW184A	586408	7172011	granitic orthogneiss
2002MBW190A	590633	7164185	metagrit
2002MBW221A	586921	7171750	amphibolite
2002MBW251A	586781	7171512	amphibolite
2002MBW258A	587096	7171020	amphibolite
2002MBW283A	593483	7166179	metasandstone
2002MBW293A	592504	7166829	meta-andesite
2002MBW296A	592452	7167303	meta-ketatophyre
2002MBW322A	572087	7158940	paragneiss
2002MBW329A	573414	7158319	granodioritic orthogneiss
2002MBW337A	574590	7158458	metagranite
2002MBW351A	578054	7159997	amphibolite
2002MBW356A	577081	7159867	metagranite
2002MBW365A	582010	7156974	metasandstone
2002MBW378A	583220	7157922	metabasalt

Table 3. (continued)

Sample Number	UTM E	UTM N	Sample Description
2002MBW381A	583442	7158229	rhyolite
2002MBW393A	582695	7154479	meta-keratophyre
2002MBW394A	582851	7154570	metagabbro
2002MBW416A	606297	7163577	granite
2002MBW432A	603929	7164930	granite
2002MBW453A	606195	7161768	tonalite
2002MBW460A	607036	7161552	tonalite
2002MBW469A	607127	7160251	granite
2002MBW474A	607141	7159299	metagranite/granodiorite
2002MBW479A	606440	7158592	granodiorite
2002MBW483A	606486	7157704	granite
2002MBW493A	589915	7142017	gabbro
2002MBW496A	589035	7141825	amphibolite
2002MBW504A	588003	7140615	amphibolite
2002MBW532A	593399	7141984	andesite
2002MBW534B	593075	7141607	andesite
2002MBW538A	592804	7141152	andesite
2002MBW552A	577943	7165125	amphibolite
2002MBW556A	577809	7164673	granite
2002MBW586A	583338	7174229	amphibolite
2002MBW591B	582886	7174084	amphibolite
2002MBW593A	582682	7173957	amphibolite
2002MBW599A	581800	7173500	amphibolite
2002MBW609A	594126	7181433	diabase
2002MBW616A	594430	7180622	basalt
2002MBW620D	594575	7180464	basalt
2002MBW630A	575770	7161988	paragneiss
2002MBW641B	578155	7160968	amphibolite
2002MBW644A	577911	7160997	amphibolite
2002MBW646A	577724	7161026	metagranite
2002MBW682A	594610	7178469	meta-quartz diorite
2002MBW686A	594301	7178173	meta-trondhjemite
2002MBW687A	593994	7177325	meta-quartz diorite
2002MBW690A	593744	7177403	metabasalt
2002MBW694A	593385	7177533	metabasalt
2002MBW703A	592527	7177452	metagabbro
2002MBW713A	587298	7172530	amphibolite
2002MBW718A	587138	7172886	amphibolite
2002MBW727A	587123	7173762	amphibolite
2002MBW738A	584952	7173550	amphibolite
2002MBW752A	594282	7181889	gabbro
2002MBW757A	595175	7181159	metagabbro
2002MBW768A	593100	7179652	metagabbro
2002MBW786B	589615	7141426	amphibolite
2002MBW790B	589520	7141064	amphibolite
2002MBW793A	586077	7140909	amphibolite
2002MBW800A	585215	7141268	garnet-hornblende gneiss
2002MBW805A	590545	7149334	metagranodiorite
2002MBW807A	590369	7149587	granodiorite

Table 3. (continued)

Sample Number	UTM E	UTM N	Sample Description
2002MBW816A	578442	7167538	amphibolite
2002MBW864A	606580	7157392	granodiorite
2002MBW876A	606476	7155783	granodiorite
2002MBW881B	603221	7161693	rhyolite
2002MBW903A	572579	7173276	amphibolite
2002MBW936A	575930	7173191	amphibolite
2002MBW957A	577503	7172970	amphibolite
2002MBW962A	577444	7172617	amphibolite
2002MBW970A	606550	7167064	granodiorite
2002MBW990A	600057	7161080	amphibolite
2002MBW996A	564001	7158192	paragneiss
2002MBW997A	564092	7158161	granite
2002MBW999A	564354	7158008	paragneiss
2002MBW1007A	566237	7157663	paragneiss
2002MBW1009A	566478	7157419	quartzite
2002MBW1010A	566594	7157397	granite
2002MBW1012A	567350	7157136	paragneiss
2002MBW1013A	574154	7160475	paragneiss
2002MBW1014A	573070	7161747	paragneiss
2002MBW1015A	572819	7162637	paragneiss
2002MBW1016A	579821	7163126	amphibolite
2002RL17A	574414	7178959	amphibolite
2002RL326A	568966	7183695	quartz diorite
2002RN10A	574003	7179763	granodiorite
2002RN25A	571678	7179578	amphibolite
2002RN53A	572526	7173306	amphibolite
2002RN88A	585543	7170482	amphibolite
2002RN104A	589791	7172728	metagabbro
2002RN114A	590795	7174723	metabasalt
2002RN144A	594640	7167912	meta-keratophyre
2002RN144B	594640	7167912	metabasalt
2002RN182A	575124	7156250	amphibolite
2002RN201A	576823	7163596	granite
2002RN236A	576339	7166222	amphibolite
2002RN263A	603459	7161916	paragneiss
2002RN276A	600532	7162203	granite
2002RN283A	599400	7163251	amphibolite
2002RN285A	604328	7161634	diabase
2002RN291A	604147	7160031	paragneiss
2002RN312A	574580	7180598	amphibolite
2002RN340B	593710	7141469	basalt
2002RN343C	593730	7141069	amphibolite
2002RN405A	591093	7176705	diabase
2002RN412B	593769	7176482	diorite
2002RN413A	593669	7176200	gabbro
2002RN416A	593631	7175118	metabasalt
2002RN431B	572018	7165082	paragneiss
2002RN432A	571998	7165017	paragneiss
2002RN448A	585920	7179422	phyllite

Table 3. (continued)

Sample Number	UTM E	UTM N	Sample Description
2002RN488B	593319	7174201	metabasalt
2002RN496A	593433	7172908	tonalite
2002RN499A	593844	7172879	metabasalt
2002RN533A	591390	7149039	metagranodiorite/meta-quartz diorite
2002RN551A	573017	7165593	paragneiss
2002RN569A	596519	7162060	granodioritic orthogneiss
2002RN581A	594095	7162055	metadiabase
2002RN636A	593633	7153515	paragneiss
2002RN643A	594351	7150330	paragneiss
2002RN687A	597893	7162271	paragneiss
2002RN691A	596945	7162459	paragneiss
2002RN692B	597018	7162190	aplite
2002RN698A	566007	7163489	paragneiss
2002RN698B	566007	7163489	granite
2002RN705A	567045	7164842	paragneiss
2002RN712A	566711	7162420	paragneiss
2002RN720A	565399	7161045	paragneiss
2002RN725A	598363	7167565	paragneiss
2002RN733A	596604	7162863	granite
2002RN733B	596604	7162863	amphibolite
2002Z18A	575746	7179074	granodiorite
2002Z26A	577480	7178264	granodiorite
2002Z33A	579011	7177317	amphibolite
2002Z40A	589631	7177490	granodiorite
2002Z50A	585385	7179044	metavolcanic
2002Z58A	584705	7179793	meta-tuff
2002Z73A	583672	7173636	amphibolite
2002Z80A	582411	7172849	amphibolite
2002Z88A	578480	7167195	amphibolite
2002Z90C	578439	7167533	amphibolite
2002Z92A	578592	7167792	amphibolite
2002Z93A	578663	7167941	amphibolite
2002Z106D	580925	7167337	schist
2002Z112A	581743	7167593	amphibolite
2002Z128A	589555	7166197	meta-shale/sandstone
2002Z129A	589553	7166463	metagraywacke
2002Z135D	591156	7175094	trondhemite
2002Z137B	591376	7174916	metagabbro
2002Z139B	591641	7174689	metabasalt
2002Z140A	591724	7174563	metabasalt
2002Z143A	592069	7174336	metagrit
2002Z150A	589523	7170211	granitic orthogneiss
2002Z164A	589199	7168522	granitic orthogneiss
2002Z166A	589108	7168184	granite
2002Z167B	589056	7168006	granodiorite
2002Z169A	593819	7165425	metabasalt
2002Z177A	594748	7165572	metabasalt
2002Z185A	594828	7166492	metabasalt
2002Z195A	577426	7157122	amphibolite

Table 3. (continued)

Sample Number	UTM E	UTM N	Sample Description
2002Z197A	577279	7157005	amphibolite
2002Z201A	576909	7156878	paragneiss
2002Z209A	573413	7162708	paragneiss
2002Z215A	573615	7163420	granite
2002Z229A	571164	7155245	amphibolite
2002Z230A	571616	7155503	amphibolite
2002Z233A	571927	7155872	amphibolite
2002Z240A	572878	7156191	granitic augen gneiss
2002Z240B	572878	7156191	amphibolite
2002Z256A	573895	7155061	amphibolite
2002Z261A	581299	7157553	metabasalt
2002Z270A	582131	7158727	metagraywacke
2002Z270B	582131	7158727	metabasalt
2002Z299B	601993	7163140	gabbro
2002Z300A	601911	7163181	amphibolite
2002Z301A	601820	7163302	granitic augen gneiss
2002Z306B	601157	7163879	granodiorite
2002Z318A	607339	7159394	granodiorite
2002Z350B	586585	7141136	amphibolite
2002Z353B	586307	7140752	amphibolite
2002Z368A	577219	7175955	amphibolite
2002Z373A	577353	7175526	granitic orthogneiss
2002Z375B	586342	7140581	amphibolite
2002Z378C	586452	7140252	amphibolite
2002Z379B	586455	7140134	amphibolite
2002Z390A	593828	7176719	metabasalt
2002Z390B	593828	7176719	quartz diorite
2002Z414A	593927	7147692	metagranodiorite
2002Z416A	594002	7147463	granitic augen gneiss
2002Z419B	594118	7146750	gabbro
2002Z421A	595593	7146550	granodiorite
2002Z444B	595476	7145053	quartz monzodiorite
2002Z445A	595483	7145137	granodiorite
2002Z453B	580225	7165295	amphibolite
2002Z456A	579900	7164770	amphibolite
2002Z459A	579718	7164499	amphibolite
2002Z466A	579135	7163773	metagranite
2002Z467B	579093	7163606	amphibolite
2002Z514B	601767	7161919	granite
2002Z530A	573160	7181090	trondhjemitic orthogneiss
2002Z548B	595599	7146630	tonalite
2002Z549A	595593	7146566	granodiorite
2002Z550A	595603	7146472	granodiorite
2002Z563B	592981	7145529	monzonite
2002Z565A	584016	7174170	amphibolite
2002Z567B	584058	7174428	amphibolite
2002Z568B	584146	7174599	paragneiss
2002Z571A	584202	7175041	amphibolite
2002Z576A	584133	7169495	amphibolite

Table 3. (continued)

Sample Number	UTM E	UTM N	Sample Description
2002Z579A	584194	7168989	paragneiss
2002Z579B	584194	7168989	amphibolite
2002Z582A	584146	7168356	amphibolite
2002Z586B	600908	7160639	amphibolite
2002Z587A	600805	7160440	granodiorite
2002Z601A	598523	7165906	quartzite
2002Z605A	563843	7158337	paragneiss
2002Z614A	563065	7156992	paragneiss
2002Z618A	563450	7155761	paragneiss
2002Z622A	563699	7154648	paragneiss
2002Z624A	563901	7153713	paragneiss
2002Z626A	564003	7153126	paragneiss
2002Z633A	585336	7151510	metagranodiorite
2002Z637A	585769	7151933	meta-quartz monzodiorite

Table 4. Major-oxide, minor-oxide, and trace-element analyses for rocks collected in the Big Delta Quadrangle. Note: --- means not analyzed; * = duplicate analyses.

Sample	Al ₂ O ₃	CaO	Cr ₂ O ₃	FeO	Fe ₂ O ₃	K ₂ O	MgO	MnO	Na ₂ O	P ₂ O ₅	SiO ₂	TiO ₂	LOI	Total	Ba	Ce	Nb	Rb	Sr	Th	U	Y	Zr
Analysis Unit	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2002AW28A	9.74	12.62	0.02	---	12.03	0.41	13.22	0.15	1.30	0.80	46.81	2.08	0.75	99.90	76	314	154	11	171	15	3	20	219
2002AW28A*	9.72	12.62	0.02	---	11.99	0.41	13.23	0.15	1.30	0.80	46.64	2.08	0.75	99.71	78	306	155	10	170	14	3	21	219
2002AW32B	12.09	14.09	0.07	---	12.54	0.70	8.56	0.17	1.66	0.33	46.11	2.29	0.70	99.31	215	52.6	34	24	383	4	<2	19	166
2002JEA3A	15.28	9.81	0.02	---	11.95	0.47	6.83	0.18	3.17	0.14	49.05	1.61	0.85	99.36	104	14.3	3	10	237	<2	<2	37	109
2002JEA6C	16.37	9.46	0.02	---	10.66	0.42	6.48	0.17	3.39	0.19	50.49	1.50	1.00	100.20	134	25.3	2	8	274	4	3	29	123
2002JEA11C	14.85	11.71	0.01	---	13.15	0.44	5.19	0.21	2.63	0.23	48.08	2.16	0.80	99.45	209	24.7	8	13	1070	4	<2	35	187
2002JEA39A	15.56	10.42	<0.01	---	12.34	0.37	5.86	0.21	2.93	0.13	49.93	1.65	0.45	99.84	154	10.8	<2	8	151	<2	<2	31	95
2002JEA56A	14.73	11.26	0.05	---	10.07	1.15	9.26	0.25	0.56	0.06	50.85	0.45	1.40	100.10	517	19.8	4	57	146	10	<2	10	39
2002JEA67A	14.46	9.18	0.02	---	14.23	0.40	8.09	0.21	2.30	0.16	47.80	1.70	1.05	99.60	226	15.3	5	9	149	3	<2	35	94
2002JEA79B	10.18	12.34	0.06	---	13.55	1.14	10.11	0.19	1.14	0.71	45.90	2.80	0.95	99.08	426	131	83	30	257	4	<2	28	243
2002JEA81A	10.29	14.82	0.08	---	13.53	1.02	9.59	0.19	0.90	0.61	42.46	3.61	1.40	98.51	1160	109	98	35	324	3	4	21	343
2002JEA89A	16.22	9.25	0.01	---	13.63	0.61	6.72	0.19	3.49	0.47	46.31	1.98	0.75	99.64	216	72.4	20	22	330	6	5	100	494
2002JEA96A	11.96	8.87	0.05	---	15.75	0.44	7.45	0.14	3.71	0.66	45.68	4.14	0.70	99.53	216	132	64	11	508	2	2	34	350
2002JEA96A*	12.00	8.87	0.05	---	15.75	0.44	7.47	0.14	3.72	0.66	45.70	4.14	0.75	99.67	217	129	63	11	508	3	2	33	349
2002JEA104A	10.98	11.11	0.06	---	14.32	0.90	9.47	0.19	0.90	0.73	45.32	3.87	1.15	98.99	432	180	110	42	303	13	9	37	343
2002JEA108A	12.51	10.58	0.07	---	12.97	0.95	9.27	0.19	2.02	0.66	45.54	3.14	0.80	98.69	362	133	87	33	480	11	<2	29	313
2002JEA111A	13.82	11.34	0.02	---	13.45	1.75	10.12	0.19	1.37	0.82	41.51	3.05	1.25	98.70	980	194	147	66	494	5	3	34	235
2002JEA129A	16.32	9.72	0.02	---	8.34	0.82	8.79	0.15	2.68	0.05	50.69	0.51	1.95	100.10	181	2.6	2	15	291	5	5	9	27
2002JEA129B	13.05	0.87	<0.01	---	1.14	0.22	0.35	0.02	6.31	0.02	77.62	0.14	0.75	100.50	144	17.3	2	4	71	2	<2	20	84
2002JEA164A	11.24	0.16	<0.01	---	4.29	0.89	1.33	0.06	3.81	0.04	75.05	0.46	1.65	98.98	216	58.8	7	35	87	17	7	10	277
2002JEA164B	6.86	17.96	0.06	---	8.67	0.04	6.67	0.40	0.27	0.32	38.97	2.56	17.25	100.00	72	55	37	7	1870	<2	<2	16	266
2002JEA165A	15.23	3.39	<0.01	---	11.19	0.06	8.40	0.10	3.70	1.06	47.99	3.14	4.65	98.92	52	250	143	5	239	11	<2	50	647
2002JEA167C	19.45	0.61	0.02	---	10.22	3.78	3.97	0.07	1.21	0.07	57.43	1.12	2.35	100.30	709	85.3	25	153	31	12	<2	32	174
2002JEA170A	14.49	12.88	0.03	---	11.72	0.34	6.73	0.20	2.18	0.21	47.96	1.61	1.10	99.46	202	20.4	12	12	560	<2	4	16	107
2002JEA173D	14.80	8.90	0.03	---	13.65	0.56	6.59	0.24	2.88	0.32	48.03	2.52	0.75	99.25	111	48	21	22	739	4	2	37	225
2002JEA175A	16.38	6.72	0.03	---	11.22	0.31	7.00	0.18	3.73	0.29	51.19	2.27	1.30	100.60	183	42.5	19	15	408	6	<2	30	211
2002JEA181B	6.04	8.49	0.19	---	11.63	0.06	20.67	0.21	0.08	0.26	45.73	2.18	3.95	99.49	25	21.8	25	2	23	<2	7	19	147
2002JEA188B	11.52	11.43	0.12	---	12.69	0.52	9.17	0.26	0.72	0.43	48.28	3.14	1.30	99.57	160	86.9	52	25	151	5	3	28	243
2002JEA188B*	11.50	11.38	0.12	---	12.66	0.52	9.17	0.26	0.72	0.43	48.22	3.14	1.25	99.37	160	91	52	26	148	5	2	27	243
2002JEA196A	12.67	9.37	0.04	---	14.27	0.40	6.97	0.20	4.05	0.95	45.59	4.02	0.60	99.13	246	200	99	14	1060	9	4	35	459
2002JEA199A	15.43	1.45	<0.01	---	1.41	4.47	0.42	0.03	3.58	0.10	72.46	0.25	0.65	100.30	480	58.5	11	257	176	21	7	13	113
2002JEA227B	15.74	11.46	0.06	---	10.53	0.29	9.52	0.16	1.24	0.14	46.96	1.42	1.15	98.66	59	16.1	4	10	215	<2	<2	24	92
2002JEA234A	14.99	9.33	0.03	---	12.18	1.50	7.38	0.21	1.19	0.33	48.06	2.34	1.90	99.45	286	45.2	22	60	269	3	<2	25	123
2002JEA243A	9.57	0.14	<0.01	---	2.88	0.83	1.61	0.02	2.87	0.04	80.47	0.37	1.30	100.10	222	44.8	4	35	55	13	<2	11	232

Table 4. (continued)

Sample	Al2O3	CaO	Cr2O3	FeO	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI	Total	Ba	Ce	Nb	Rb	Sr	Th	U	Y	Zr
Analysis Unit	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2002JEA257B	20.97	0.70	0.01	---	9.19	4.19	2.21	0.13	1.09	0.17	56.21	1.26	4.05	100.20	977	90.9	21	177	71	18	3	40	191
2002JEA266B	11.00	10.65	0.07	---	12.96	0.59	9.94	0.17	1.94	0.49	47.00	3.87	0.65	99.33	166	92.9	70	15	268	2	2	25	297
2002JEA294D	13.61	1.01	<0.01	---	1.94	6.06	0.44	0.03	2.72	0.11	73.72	0.22	0.25	100.10	386	38.9	11	196	124	7	12	25	78
2002JEA301A	14.05	1.47	<0.01	---	2.04	4.84	0.56	0.04	2.72	0.08	73.33	0.26	0.60	100.00	758	92.5	15	197	149	30	<2	27	144
2002JEA315A	13.86	0.81	<0.01	---	1.28	4.45	0.34	0.05	2.96	0.11	75.49	0.13	0.70	100.20	223	19.8	10	237	69	6	5	22	50
2002JEA319A	16.35	3.80	<0.01	---	4.66	2.82	1.22	0.10	3.21	0.19	66.60	0.51	0.80	100.20	890	82.6	16	128	286	17	<2	35	202
2002JEA357A	24.23	0.30	0.01	---	14.07	4.23	10.05	0.09	0.11	0.23	38.48	1.37	6.80	100.00	987	168	29	202	58	28	7	28	199
2002JEA357A*	24.25	0.30	0.01	---	14.10	4.23	10.05	0.09	0.11	0.23	38.30	1.37	6.75	99.80	987	174	29	202	58	28	9	28	198
2002JEA374C	11.40	8.63	0.04	---	13.80	1.15	10.78	0.18	2.81	0.80	44.64	3.82	0.75	98.82	450	181	89	49	583	10	<2	40	400
2002JEA375A	10.04	12.75	0.11	---	11.95	0.22	14.63	0.17	1.74	0.57	42.32	2.11	2.75	99.36	119	147	66	5	593	10	3	18	181
2002JEA385A	13.64	10.78	0.09	---	10.49	0.22	10.09	0.20	2.29	0.32	50.19	0.66	0.90	99.85	151	67.5	2	6	207	4	3	20	81
2002JEA390A	17.92	7.87	<0.01	---	11.40	1.18	5.90	0.24	3.58	0.09	50.69	0.56	1.25	100.70	807	24.6	4	33	193	4	5	13	50
2002JEA390A*	17.95	7.88	<0.01	---	11.38	1.18	5.90	0.24	3.56	0.09	50.68	0.55	1.20	100.60	808	25.7	3	34	193	4	4	14	50
2002JEA401B	16.62	9.75	<0.01	---	11.24	0.74	4.06	0.24	2.41	0.07	53.20	0.52	1.10	99.90	292	27.2	5	18	307	4	<2	15	49
2002JEA413D	15.07	10.43	0.02	---	11.97	0.23	6.32	0.19	3.56	0.14	49.93	1.43	0.90	100.20	62	12.6	3	5	159	<2	<2	32	106
2002JEA506A	13.56	8.67	<0.01	---	14.72	0.23	4.95	0.22	3.47	0.44	47.29	2.99	2.40	98.96	556	56.8	28	8	400	4	3	44	251
2002JEA513A	8.11	11.08	0.12	---	13.21	0.94	11.59	0.23	0.25	0.49	47.13	3.17	3.10	99.42	261	75	44	46	159	<2	<2	25	240
2002JEA519A	13.81	0.61	<0.01	---	3.77	2.01	1.90	0.03	4.80	0.08	71.34	0.38	1.30	100.00	552	88.8	15	77	70	22	6	27	143
2002JEA525A	13.59	9.56	0.02	---	14.29	1.71	6.41	0.22	1.97	0.56	45.37	2.99	2.35	99.04	445	94.8	34	69	236	7	<2	56	358
2002JEA529A	13.68	2.25	<0.01	---	3.58	3.78	1.33	0.05	2.36	0.08	71.55	0.43	1.50	100.60	836	101	19	157	192	18	5	28	176
2002JEA576A	14.86	0.66	<0.01	---	0.75	4.18	0.19	0.03	4.14	0.02	74.69	0.09	0.65	100.30	189	15.1	10	210	74	19	<2	20	32
2002JEA595A	15.02	15.31	0.03	---	6.71	0.09	12.31	0.12	0.87	<0.01	48.19	0.23	0.85	99.72	26	0.8	<2	5	134	<2	<2	3	12
2002JEA602A	12.84	10.41	0.03	---	14.03	1.01	10.70	0.22	0.75	0.65	41.43	4.20	2.20	98.46	557	121	105	45	405	12	<2	25	386
2002JEA615A	12.51	2.47	<0.01	3.6	5.04	3.16	1.99	0.08	1.31	0.02	71.72	0.67	1.15	100.10	---	---	---	---	---	---	---	---	---
2002JEA622A	13.54	0.40	<0.01	---	6.19	3.25	1.91	0.09	0.43	0.06	72.44	0.79	1.05	100.20	637	91.7	9	114	82	17	4	27	210
2002JEA625A	14.77	10.49	<0.01	---	17.09	0.24	4.65	0.31	1.74	0.68	44.77	3.98	0.15	98.87	111	77.1	44	8	312	<2	5	31	222
2002JEA629A	8.47	0.57	<0.01	2.6	3.09	2.31	1.08	0.05	0.96	0.04	82.35	0.48	0.75	100.20	---	---	---	---	---	---	---	---	---
2002JEA637A	10.85	0.93	<0.01	4.1	5.23	3.13	1.90	0.09	0.74	0.03	75.46	0.69	1.40	100.50	---	---	---	---	---	---	---	---	---
2002KH55A	17.70	7.92	<0.01	---	9.18	1.64	3.83	0.15	2.28	0.17	55.87	1.10	0.35	100.20	1200	47.3	8	67	441	11	2	19	114
2002LF9A	14.40	9.22	0.01	---	13.57	0.70	6.90	0.21	3.46	0.16	49.24	1.52	0.60	100.00	148	15.3	6	23	238	<2	<2	31	106
2002LF15A	27.05	16.28	<0.01	---	4.22	0.23	3.67	0.08	1.48	0.80	43.45	2.11	0.60	100.00	72	24.6	5	17	608	4	<2	54	232
2002LF15A*	27.09	16.29	<0.01	---	4.23	0.23	3.67	0.08	1.48	0.80	43.22	2.12	0.60	99.79	74	23.9	4	16	610	5	<2	54	232
2002LF35A	16.21	12.25	<0.01	---	9.05	0.03	4.80	0.16	0.11	0.12	52.75	1.11	3.70	100.30	46	8.2	3	4	405	<2	2	15	79
2002LF37A	16.26	5.97	0.03	---	8.19	0.70	8.29	0.16	3.68	0.07	52.01	0.74	4.30	100.40	179	5.2	<2	15	148	<2	<2	12	49

Table 4. (continued)

Sample	Al2O3	CaO	Cr2O3	FeO	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI	Total	Ba	Ce	Nb	Rb	Sr	Th	U	Y	Zr
Analysis Unit	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2002LF78A	11.25	9.00	0.02	---	13.00	0.09	6.22	0.14	5.00	0.53	46.80	3.91	3.25	99.21	512	99	64	7	204	4	<2	30	334
2002LF97A	8.53	0.04	<0.01	---	4.38	1.05	1.20	0.03	1.38	0.01	81.43	0.34	1.85	100.20	219	46.3	5	48	37	11	<2	18	248
2002LF108C	11.18	12.61	0.05	---	8.49	0.14	9.63	0.18	2.62	0.13	52.69	0.47	1.45	99.62	32	21.2	3	5	35	<2	4	7	45
2002LF115A	14.33	7.11	0.03	---	11.95	2.33	6.17	0.18	3.01	0.44	48.98	2.30	2.10	98.94	1270	49.4	19	83	340	3	<2	42	202
2002MBW1A	14.06	5.95	<0.01	---	12.78	0.39	4.33	0.17	3.53	0.06	57.24	0.87	0.85	100.20	131	7.5	<2	14	110	4	2	18	38
2002MBW9A	14.41	7.59	<0.01	---	8.29	0.38	6.23	0.14	4.09	0.14	56.74	0.59	0.45	99.06	86	9.2	<2	12	238	2	<2	16	46
2002MBW9A*	14.44	7.58	<0.01	---	8.29	0.38	6.25	0.14	4.10	0.14	56.89	0.59	0.65	99.46	86	9.6	<2	12	240	2	<2	16	46
2002MBW30A	15.37	9.77	0.05	---	10.79	0.67	7.08	0.17	3.65	0.36	48.38	1.85	1.55	99.69	214	45.4	11	11	360	<2	4	27	165
2002MBW49C	15.55	9.95	0.04	---	12.21	0.59	6.95	0.19	2.27	0.27	47.81	2.18	0.80	98.80	106	45.5	17	23	665	8	<2	26	171
2002MBW78A	12.58	2.41	<0.01	---	1.61	2.86	2.66	0.01	2.98	0.48	71.57	0.56	1.10	98.83	3640	50.2	12	118	172	16	8	34	175
2002MBW84A	12.72	0.32	<0.01	---	2.14	4.69	1.34	0.03	1.64	0.17	75.63	0.28	1.45	100.40	2360	68.3	10	160	30	19	7	33	143
2002MBW86A	12.98	0.64	<0.01	---	2.57	6.44	1.35	0.04	0.73	0.17	71.82	0.37	1.75	98.84	>4000	45.1	11	232	70	21	11	31	132
2002MBW97A	14.71	2.79	<0.01	---	3.02	4.39	0.91	0.06	2.69	0.09	70.24	0.35	0.45	99.70	1070	57.4	13	165	314	23	5	20	119
2002MBW106A	17.06	4.92	<0.01	---	10.52	1.02	6.02	0.18	3.99	0.12	53.86	0.97	1.85	100.50	560	9.4	3	31	405	<2	<2	21	73
2002MBW113A	15.42	7.37	0.01	---	11.10	0.78	5.88	0.27	4.72	0.16	50.93	1.55	1.15	99.36	494	13	4	19	241	<2	6	34	117
2002MBW116A	17.36	9.34	0.02	---	10.70	1.15	5.36	0.22	3.96	0.07	47.75	1.45	1.05	98.42	336	10	<2	35	1360	3	<2	30	154
2002MBW119A	15.91	8.89	0.04	---	10.01	0.62	5.99	0.19	4.89	0.11	51.06	1.21	0.45	99.37	144	9.2	3	14	194	6	<2	26	79
2002MBW122A	17.84	8.20	<0.01	---	11.61	0.95	6.02	0.15	3.90	0.15	48.85	0.80	1.50	100.00	286	26.4	<2	30	371	5	2	21	76
2002MBW122A*	17.84	8.20	<0.01	---	11.65	0.95	6.04	0.15	3.89	0.15	48.87	0.80	1.75	100.30	286	25.5	<2	29	372	5	2	21	77
2002MBW153A	14.84	1.06	<0.01	---	0.75	3.99	0.14	0.09	4.00	0.03	73.26	0.05	0.55	98.75	106	20.5	7	181	61	4	2	39	27
2002MBW176A	13.30	12.07	0.02	---	14.25	1.41	8.04	0.19	2.30	0.69	39.59	3.86	3.10	98.81	728	133	91	76	825	7	8	33	318
2002MBW184A	17.02	0.28	<0.01	---	1.65	6.74	0.38	0.01	3.32	0.10	68.05	0.16	2.50	100.20	207	48.8	16	280	81	15	3	43	107
2002MBW190A	10.93	0.30	<0.01	---	6.17	0.62	2.41	0.05	2.91	0.05	74.11	0.46	2.05	100.10	155	22.4	7	28	45	14	4	11	218
2002MBW221A	13.96	9.84	0.03	---	13.12	1.30	7.75	0.17	3.02	0.81	44.38	3.65	1.40	99.41	909	146	110	52	816	8	9	33	370
2002MBW251A	12.83	16.58	0.05	---	11.24	0.28	7.37	0.12	0.94	0.85	43.83	3.06	1.60	98.74	62	208	170	6	880	14	<2	23	306
2002MBW258A	8.40	11.28	0.14	---	13.68	0.38	14.20	0.23	1.01	0.43	45.55	2.89	1.20	99.39	237	73.6	45	12	208	5	<2	20	188
2002MBW283A	9.86	0.17	<0.01	---	4.59	2.08	1.92	0.04	0.45	0.06	78.39	0.38	2.15	100.10	555	58.9	9	89	22	10	2	17	224
2002MBW293A	15.13	5.16	<0.01	---	6.93	2.08	2.64	0.08	3.27	0.17	58.58	0.83	5.60	100.50	1060	99.8	16	95	481	16	7	31	179
2002MBW296A	15.86	1.24	0.01	---	4.87	0.32	2.57	0.06	7.33	0.10	64.37	0.70	2.20	99.62	150	70.3	9	10	303	16	6	15	286
2002MBW322A	13.39	2.54	0.01	---	5.07	2.94	2.41	0.07	1.58	0.09	69.82	0.64	1.27	99.84	618	78	11	115	199	14	2	25	157
2002MBW329A	14.96	3.36	<0.01	---	3.73	3.25	1.42	0.06	2.61	0.11	68.92	0.40	0.85	99.68	723	62.7	13	134	173	17	4	21	122
2002MBW329A*	14.99	3.36	<0.01	---	3.74	3.25	1.42	0.06	2.62	0.11	69.01	0.40	1.05	100.00	725	62.1	13	134	172	17	4	21	122
2002MBW337A	17.15	2.56	<0.01	---	2.84	4.29	1.05	0.03	3.43	0.20	67.70	0.55	0.65	100.50	1370	108	11	181	469	31	2	16	232
2002MBW351A	10.19	10.55	0.16	---	12.73	1.01	11.67	0.21	0.68	0.44	48.08	2.32	1.05	99.08	179	79.7	44	58	62	<2	5	23	160

Table 4. (continued)

Sample	Al2O3	CaO	Cr2O3	FeO	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI	Total	Ba	Ce	Nb	Rb	Sr	Th	U	Y	Zr
Analysis Unit	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2002MBW356A	15.41	1.74	<0.01	---	1.86	4.52	0.53	0.03	3.36	0.12	71.47	0.33	0.55	99.90	707	70.3	12	262	237	25	4	15	165
2002MBW365A	8.87	0.39	<0.01	---	3.57	1.40	1.46	0.03	1.61	0.06	81.21	0.36	1.15	100.10	294	44.4	8	59	37	13	4	17	220
2002MBW378A	14.72	10.75	0.03	---	11.68	0.14	6.83	0.18	2.55	0.24	47.78	1.85	2.95	99.69	168	33.3	8	9	638	<2	<2	26	151
2002MBW381A	14.64	0.16	<0.01	---	2.24	4.32	0.34	0.03	3.05	0.07	73.32	0.32	1.45	99.90	1080	65.6	25	216	78	20	5	18	138
2002MBW393A	9.95	0.37	<0.01	---	2.69	0.44	1.25	0.04	4.18	0.04	79.08	0.42	0.90	99.35	183	33.4	7	18	54	20	<2	11	257
2002MBW394A	15.24	9.40	0.04	---	10.02	0.82	7.71	0.15	2.49	0.17	47.68	1.58	4.80	100.10	305	24.5	5	33	320	<2	<2	26	104
2002MBW416A	14.54	2.41	<0.01	---	3.40	3.50	1.10	0.05	2.19	0.10	71.50	0.48	0.70	100.00	788	81.4	13	137	182	9	7	25	156
2002MBW432A	14.42	1.49	<0.01	---	1.91	4.48	0.55	0.05	2.84	0.10	73.18	0.21	0.80	100.00	241	32.5	9	176	125	6	5	22	68
2002MBW453A	16.82	4.59	<0.01	---	4.95	2.51	1.72	0.12	3.44	0.20	64.09	0.61	0.70	99.74	1070	91.7	9	90	419	18	6	23	163
2002MBW460A	16.18	4.46	<0.01	---	3.92	2.64	1.56	0.07	2.42	0.11	67.77	0.57	0.15	99.84	653	77.3	9	98	224	16	7	19	176
2002MBW469A	15.70	3.07	<0.01	---	3.43	3.68	1.12	0.07	2.91	0.13	68.74	0.42	0.95	100.20	845	74.5	13	153	272	17	4	26	149
2002MBW469A*	15.67	3.06	<0.01	---	3.42	3.67	1.11	0.07	2.91	0.13	68.78	0.42	0.85	100.10	842	72.2	13	152	273	18	4	25	149
2002MBW474A	15.78	2.63	<0.01	---	3.25	3.81	1.15	0.06	3.04	0.12	69.38	0.39	0.45	100.10	1160	72.7	11	165	253	18	5	27	155
2002MBW479A	15.89	3.31	<0.01	---	3.65	3.30	1.22	0.09	3.31	0.14	68.25	0.46	0.80	100.40	993	68.2	13	122	316	17	7	24	150
2002MBW483A	14.31	0.59	<0.01	---	1.03	4.10	0.13	0.04	3.88	0.20	75.04	0.07	0.50	99.88	25	5	21	285	6	9	6	9	21
2002MBW493A	14.54	9.89	0.02	---	13.22	0.83	7.09	0.22	2.65	0.25	46.37	2.16	2.50	99.73	248	29.5	9	31	238	4	3	42	145
2002MBW496A	13.53	8.49	<0.01	---	15.27	1.35	5.29	0.22	3.27	0.55	47.30	3.24	1.50	100.00	286	76.2	39	48	111	<2	7	43	298
2002MBW504A	14.21	8.73	<0.01	---	14.79	0.76	4.80	0.26	3.09	0.66	48.34	3.14	0.95	99.72	363	88.5	36	29	262	3	5	48	323
2002MBW532A	15.40	4.87	0.04	---	6.52	3.18	6.85	0.12	2.43	0.10	57.59	0.63	2.45	100.20	843	48.3	8	170	511	11	<2	25	134
2002MBW534B	15.75	5.06	0.03	---	6.39	3.02	6.10	0.11	2.73	0.12	57.90	0.65	2.55	100.40	875	53.5	11	145	479	12	6	24	143
2002MBW538A	15.66	5.79	0.04	---	6.85	3.76	6.26	0.11	2.34	0.12	56.60	0.72	1.95	100.20	861	51	7	168	458	8	<2	26	138
2002MBW552A	13.40	10.63	0.05	---	13.07	1.04	9.65	0.29	1.69	0.91	46.53	1.59	1.35	100.20	451	56.7	18	56	142	14	<2	36	150
2002MBW556A	14.56	1.05	<0.01	---	0.84	4.44	0.22	0.05	3.58	0.07	74.46	0.08	0.70	100.00	201	19.4	12	218	91	10	6	21	44
2002MBW556A*	14.54	1.05	<0.01	---	0.84	4.44	0.22	0.05	3.57	0.08	74.36	0.08	0.70	99.89	200	20.8	12	218	93	9	7	20	45
2002MBW586A	19.62	9.94	<0.01	---	12.34	0.33	5.96	0.13	3.46	0.03	46.26	1.04	0.90	100.00	55	2.8	<2	10	282	3	<2	8	27
2002MBW591B	13.78	8.04	<0.01	---	7.40	0.69	4.35	0.12	2.19	0.27	61.95	0.56	0.80	100.20	245	39.9	4	19	360	<2	4	19	88
2002MBW593A	16.27	7.22	0.02	---	10.19	0.65	6.71	0.19	4.20	0.10	51.75	0.74	1.55	99.58	259	16.5	2	22	153	<2	<2	15	68
2002MBW599A	13.49	9.12	0.02	---	12.66	0.71	6.33	0.21	3.16	0.22	51.99	1.88	0.75	100.50	755	20.7	6	18	210	<2	2	40	133
2002MBW609A	15.54	11.74	0.03	---	10.47	0.25	7.10	0.17	2.76	0.09	49.55	1.19	1.55	100.40	54	8.2	<2	8	139	2	<2	22	73
2002MBW616A	12.05	8.34	0.07	---	10.81	1.03	10.44	0.16	3.20	0.21	50.45	0.58	2.70	100.00	716	17.9	4	19	83	5	<2	10	35
2002MBW620D	15.39	10.25	0.03	---	8.54	1.20	7.49	0.13	3.69	0.12	48.51	0.65	4.20	100.20	424	9.4	<2	25	162	4	<2	13	36
2002MBW620D*	15.34	10.24	0.03	---	8.51	1.19	7.51	0.13	3.68	0.12	48.35	0.66	4.10	99.86	424	9.2	3	25	161	3	<2	13	34
2002MBW630A	13.88	1.59	<0.01	2.5	3.97	3.10	1.47	0.06	1.54	0.10	72.74	0.54	1.35	100.30	---	---	---	---	---	---	---	---	---
2002MBW641B	15.89	9.73	<0.01	---	11.14	0.45	7.25	0.16	2.34	0.13	49.93	1.91	0.65	99.59	83	28.2	13	13	445	2	<2	15	86

Table 4. (continued)

Sample	Al2O3	CaO	Cr2O3	FeO	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI	Total	Ba	Ce	Nb	Rb	Sr	Th	U	Y	Zr
Analysis Unit	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2002MBW996A*	14.15	2.47	0.01	5.8	7.05	2.95	2.65	0.09	1.68	0.11	67.28	0.83	0.80	100.10	---	---	---	---	---	---	---	---	---
2002MBW997A	14.34	0.99	<0.01	---	1.53	5.27	0.38	0.03	2.60	0.12	74.01	0.15	0.70	100.10	178	46.2	10	197	98	16	16	18	62
2002MBW999A	13.12	2.10	<0.01	4.2	5.39	2.35	2.23	0.07	1.16	0.09	72.26	0.67	1.15	100.60	---	---	---	---	---	---	---	---	---
2002MBW1007A	12.44	0.80	<0.01	4.7	5.65	2.92	2.10	0.09	0.84	0.06	73.96	0.75	0.85	100.50	---	---	---	---	---	---	---	---	---
2002MBW1009A	4.70	0.55	<0.01	---	1.50	1.00	0.57	0.01	0.85	0.03	90.29	0.24	0.35	100.10	75	6.9	5	46	44	2	<2	4	145
2002MBW1010A	14.55	1.18	<0.01	---	1.09	4.91	0.50	0.03	2.93	0.14	74.01	0.09	0.70	100.10	113	10.2	6	206	73	7	11	13	30
2002MBW1012A	11.81	0.49	<0.01	3.5	4.86	2.50	1.71	0.06	0.69	0.07	75.89	0.66	1.35	100.10	---	---	---	---	---	---	---	---	---
2002MBW1013A	9.71	0.70	<0.01	3.0	3.92	2.59	1.42	0.06	0.98	0.05	78.97	0.56	1.10	100.10	---	---	---	---	---	---	---	---	---
2002MBW1014A	12.36	2.29	<0.01	3.7	4.95	3.19	1.95	0.07	1.21	0.10	72.84	0.60	0.90	100.50	---	---	---	---	---	---	---	---	---
2002MBW1015A	11.48	2.64	0.01	4.2	5.31	2.70	2.22	0.09	0.82	0.12	73.03	0.69	1.00	100.10	---	---	---	---	---	---	---	---	---
2002MBW1016A	13.78	8.78	0.04	---	18.11	1.24	8.01	0.18	2.66	0.69	41.50	4.24	0.45	99.68	599	121	85	56	369	4	4	35	329
2002MBW1016A*	13.76	8.82	0.04	---	18.15	1.24	8.03	0.18	2.65	0.69	41.36	4.24	0.55	99.71	602	122	84	56	366	3	4	34	330
2002RL17A	14.20	9.19	0.01	---	14.50	0.32	5.97	0.22	0.77	0.34	51.39	2.71	0.50	100.10	32	42.8	17	10	41	4	2	36	171
2002RL17A*	13.84	9.02	0.02	---	14.11	0.66	6.63	0.24	3.00	0.20	48.91	1.92	0.55	99.10	157	22.1	11	24	160	<2	5	49	121
2002RL326A	19.68	9.71	<0.01	---	7.88	1.09	3.79	0.14	2.12	0.15	52.97	0.89	1.95	100.40	680	32.4	4	44	468	<2	3	13	88
2002RN10A	15.28	4.09	<0.01	---	4.55	3.56	1.68	0.08	2.66	0.11	66.94	0.54	0.25	99.74	1030	67.5	9	136	292	26	7	19	121
2002RN25A	9.31	10.95	0.11	---	12.78	0.34	12.14	0.18	1.52	0.42	48.39	3.01	0.70	99.84	115	137	198	8	232	6	<2	24	242
2002RN53A	11.93	9.24	0.07	---	14.45	0.98	11.01	0.18	2.14	0.59	43.69	4.17	0.55	98.99	262	109	88	38	406	4	5	26	368
2002RN88A	18.26	9.43	<0.01	---	9.12	0.83	7.63	0.13	3.20	0.02	49.15	0.72	1.70	100.20	1100	2.5	<2	39	345	8	<2	9	30
2002RN104A	13.83	9.25	<0.01	---	15.02	0.12	5.33	0.25	3.30	0.45	47.43	3.04	2.15	100.20	732	55.5	23	9	431	5	<2	42	236
2002RN114A	13.51	7.46	<0.01	---	12.70	0.25	5.27	0.20	4.32	0.40	48.09	2.34	4.00	98.53	2190	53	18	9	543	2	8	40	229
2002RN144A	11.05	1.07	<0.01	---	4.87	1.07	1.57	0.05	2.92	0.09	75.81	0.49	1.35	100.40	250	67.4	8	52	110	19	4	23	266
2002RN144B	13.88	8.70	<0.01	---	15.70	1.02	4.53	0.26	1.66	0.69	47.40	3.77	1.15	98.75	133	95.9	42	51	232	8	3	58	411
2002RN182A	18.47	8.80	<0.01	---	8.89	0.60	5.02	0.15	4.42	0.10	51.89	0.67	0.70	99.72	450	10.8	2	17	275	6	<2	17	66
2002RN201A	14.94	1.39	<0.01	---	0.65	4.32	0.18	0.02	3.80	0.05	74.42	0.05	0.50	100.30	129	12.7	7	179	92	3	<2	19	24
2002RN201A*	14.91	1.39	<0.01	---	0.65	4.31	0.18	0.02	3.79	0.05	74.50	0.05	0.45	100.30	128	12.1	7	178	92	2	<2	19	24
2002RN236A	18.67	14.08	<0.01	---	12.58	0.16	7.63	0.18	1.30	<0.01	42.92	1.25	1.10	99.89	40	1	<2	8	192	<2	2	5	16
2002RN263A	14.45	0.36	<0.01	3.5	4.70	3.14	1.47	0.07	1.18	0.07	72.20	0.59	2.30	100.50	---	---	---	---	---	---	---	---	---
2002RN276A	14.01	1.44	<0.01	---	1.72	4.32	0.34	0.03	2.90	0.10	74.32	0.21	0.55	100.00	779	66.4	16	184	165	12	3	25	121
2002RN283A	19.95	13.93	0.03	---	6.09	0.95	10.05	0.09	1.45	<0.01	46.50	0.18	1.45	100.70	93	1	<2	53	586	2	<2	5	28
2002RN285A	9.35	11.52	0.04	---	14.78	0.92	10.65	0.25	0.41	0.76	41.18	3.45	6.50	99.83	1190	147	105	28	423	9	<2	24	209
2002RN291A	13.51	0.69	<0.01	3.7	4.69	2.55	1.50	0.07	1.19	0.08	73.57	0.53	1.70	100.10	---	---	---	---	---	---	---	---	---
2002RN312A	15.32	10.34	0.03	---	10.88	0.26	7.22	0.19	3.93	0.12	50.00	1.26	0.55	100.10	62	9	<2	9	89	<2	<2	26	79
2002RN340B	15.97	5.78	0.03	---	6.85	2.38	6.48	0.12	2.95	0.13	54.16	0.69	4.90	100.40	668	48.6	11	106	462	14	<2	23	137

Table 4. (continued)

Sample	Al ₂ O ₃	CaO	Cr ₂ O ₃	FeO	Fe ₂ O ₃	K ₂ O	MgO	MnO	Na ₂ O	P ₂ O ₅	SiO ₂	TiO ₂	LOI	Total	Ba	Ce	Nb	Rb	Sr	Th	U	Y	Zr
Analysis Unit	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2002RN343C	13.01	8.52	<0.01	---	16.30	0.89	3.92	0.32	3.69	1.44	47.12	3.31	1.30	99.79	614	126	54	31	345	3	2	73	480
2002RN343C*	12.99	8.47	<0.01	---	16.33	0.89	3.89	0.32	3.69	1.44	47.16	3.27	1.30	99.74	614	128	53	31	345	2	<2	72	480
2002RN405A	15.57	7.98	0.01	---	11.06	0.52	6.87	0.22	3.71	0.20	50.04	1.63	2.20	100.00	589	14	4	11	334	5	<2	34	125
2002RN412B	15.41	7.65	0.03	---	9.21	0.43	7.67	0.16	4.25	0.07	52.22	0.79	2.00	99.88	106	5.8	3	5	197	4	<2	14	55
2002RN413A	18.09	12.36	<0.01	---	14.73	0.13	7.00	0.16	1.15	<0.01	41.96	1.25	2.90	99.74	61	1.3	<2	4	439	4	<2	7	29
2002RN416A	14.53	5.99	0.02	---	12.57	1.71	5.92	0.20	3.76	0.48	48.91	2.50	2.55	99.12	1360	55.6	20	64	267	4	4	48	228
2002RN431B	10.02	2.43	<0.01	1.0	2.00	1.89	0.67	0.02	1.84	<0.01	80.44	0.31	0.50	100.10	---	---	---	---	---	---	---	---	---
2002RN432A	12.63	0.79	<0.01	3.3	4.67	2.82	1.79	0.05	0.60	0.07	74.54	0.59	0.70	99.25	---	---	---	---	---	---	---	---	---
2002RN448A	10.87	7.76	0.1	---	13.50	0.06	12.27	0.15	2.26	0.55	43.33	3.91	4.00	98.77	81	106	77	6	171	<2	3	26	333
2002RN488B	14.64	7.06	0.01	---	13.43	0.68	6.45	0.33	3.66	0.36	47.89	2.70	1.60	98.80	167	45.1	15	28	468	<2	2	37	224
2002RN496A	16.40	4.65	<0.01	---	5.39	2.64	1.72	0.14	2.76	0.12	64.54	0.65	1.00	100.00	1020	55.4	8	97	277	14	5	22	124
2002RN499A	7.91	9.69	0.15	---	14.47	0.11	18.02	0.25	0.23	0.37	44.27	2.79	0.30	98.56	68	93.7	55	3	133	10	4	25	195
2002RN533A	18.43	5.42	<0.01	---	5.89	2.76	2.30	0.08	2.99	0.25	59.97	0.85	0.95	99.90	805	68.4	14	140	353	5	4	30	222
2002RN551A	13.44	2.30	0.01	4.1	5.32	2.71	2.38	0.06	1.64	0.09	70.78	0.69	1.15	100.60	---	---	---	---	---	---	---	---	---
2002RN551A*	13.42	2.30	0.01	4.2	5.32	2.70	2.38	0.06	1.64	0.09	70.89	0.69	1.10	100.60	---	---	---	---	---	---	---	---	---
2002RN569A	15.06	3.57	0.01	5.2	6.56	2.69	3.13	0.06	1.83	0.10	64.72	0.87	0.95	99.55	---	---	---	---	---	---	---	---	---
2002RN581A	14.24	8.80	0.02	---	12.42	0.84	5.49	0.20	2.86	0.36	49.71	2.56	1.85	99.34	361	49.6	16	31	390	6	4	38	219
2002RN636A	13.29	1.34	<0.01	---	4.19	2.54	1.70	0.05	1.51	0.09	73.06	0.49	1.55	99.82	581	58	11	100	186	9	9	20	148
2002RN643A	15.37	0.72	0.01	---	5.51	3.04	1.76	0.09	1.20	0.07	69.27	0.63	2.35	100.00	769	82.9	11	121	158	10	4	20	186
2002RN687A	12.64	0.88	<0.01	3.5	4.66	3.18	1.78	0.06	1.08	0.08	73.56	0.58	1.55	100.10	---	---	---	---	---	---	---	---	---
2002RN691A	12.85	0.72	<0.01	3.2	4.86	2.72	1.66	0.03	1.14	0.03	73.45	0.67	1.90	100.10	---	---	---	---	---	---	---	---	---
2002RN692B	14.06	0.63	<0.01	---	0.93	4.26	0.17	0.03	3.20	0.16	75.86	0.07	0.70	100.10	143	12.8	13	258	58	10	<2	20	38
2002RN698A	12.88	1.95	<0.01	4.1	5.36	2.63	2.26	0.07	1.32	0.09	71.66	0.68	1.20	100.10	---	---	---	---	---	---	---	---	---
2002RN698B	13.98	0.96	<0.01	---	0.86	5.76	0.28	0.02	1.86	0.10	75.55	0.09	0.70	100.10	508	20.5	4	169	154	5	7	24	42
2002RN698B*	13.97	0.96	<0.01	---	0.86	5.73	0.28	0.02	1.86	0.10	75.55	0.09	0.70	100.10	509	20.4	5	168	155	5	6	25	41
2002RN705A	11.46	0.99	<0.01	4.5	5.18	2.48	1.70	0.10	0.94	0.05	75.60	0.71	0.80	100.00	---	---	---	---	---	---	---	---	---
2002RN712A	11.90	0.72	<0.01	4.3	5.19	2.87	1.88	0.09	0.68	0.04	74.99	0.73	0.90	100.00	---	---	---	---	---	---	---	---	---
2002RN720A	12.05	0.64	<0.01	5.4	6.53	3.58	2.41	0.08	0.63	0.07	72.25	0.88	0.90	100.00	---	---	---	---	---	---	---	---	---
2002RN725A	12.36	1.51	0.01	5.8	6.86	2.15	2.42	0.10	0.90	0.02	71.49	0.87	1.25	99.90	---	---	---	---	---	---	---	---	---
2002RN733A	13.95	0.59	<0.01	---	0.90	4.76	0.15	0.02	2.95	0.16	76.15	0.10	0.80	100.50	185	18.4	10	269	52	8	5	15	48
2002RN733B	7.78	10.83	0.19	---	9.58	0.77	16.41	0.18	0.69	0.03	51.23	0.23	1.10	99.02	123	11.2	3	42	23	4	<2	11	22
2002Z18A	14.89	3.11	<0.01	---	3.40	3.98	1.05	0.08	2.69	0.10	69.28	0.39	0.85	99.81	1030	72.4	13	163	309	22	3	28	135
2002Z26A	15.07	3.14	<0.01	---	3.54	3.83	1.05	0.07	2.76	0.10	70.00	0.40	0.55	100.50	1110	60.4	11	164	320	19	4	26	126
2002Z33A	10.36	12.84	0.07	---	12.42	0.55	12.82	0.18	2.02	0.74	43.88	2.58	0.40	98.85	193	204	141	9	317	6	7	22	257

Table 4. (continued)

Sample	Al2O3	CaO	Cr2O3	FeO	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI	Total	Ba	Ce	Nb	Rb	Sr	Th	U	Y	Zr
Analysis Unit	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2002Z40A	14.74	2.92	<0.01	---	3.24	4.14	0.95	0.06	2.69	0.10	70.01	0.39	0.75	100.00	1020	76	12	178	310	16	3	28	127
2002Z50A	14.39	10.31	0.04	---	11.66	0.07	7.19	0.21	1.46	0.26	47.55	1.96	4.20	99.31	40	63.9	12	4	406	4	<2	29	214
2002Z58A	11.36	1.46	<0.01	---	2.89	1.95	1.02	0.07	2.89	0.06	75.29	0.50	2.50	100.00	543	68.9	9	76	217	19	<2	20	351
2002Z73A	17.87	7.33	<0.01	---	11.95	0.39	7.43	0.15	4.20	0.08	46.92	2.24	1.40	100.00	79	5.1	<2	10	222	2	3	21	47
2002Z80A	15.03	10.19	0.11	---	10.17	0.89	9.57	0.34	2.04	0.06	48.54	0.47	2.60	100.00	520	16.7	2	30	116	<2	3	12	36
2002Z88A	14.74	9.16	0.02	---	11.28	0.87	6.71	0.19	3.13	0.18	50.24	1.73	0.75	99.01	719	24.7	6	25	294	<2	6	32	125
2002Z90C	13.99	10.55	0.02	---	13.09	0.51	7.54	0.18	2.72	0.13	48.34	1.57	0.70	99.34	293	8.4	3	15	146	3	<2	26	41
2002Z90C*	14.01	10.57	0.02	---	13.13	0.51	7.54	0.17	2.72	0.13	48.44	1.56	0.55	99.35	293	8.3	3	15	144	3	<2	26	41
2002Z92A	13.71	10.15	0.02	---	13.47	0.24	6.77	0.19	2.70	0.13	50.88	1.58	0.60	100.40	112	14.5	8	6	134	<2	<2	32	83
2002Z93A	15.12	7.90	0.01	---	14.10	0.33	5.07	0.17	4.90	0.18	49.57	1.40	0.20	98.96	64	20.9	2	6	140	4	2	44	110
2002Z106D	9.71	8.66	0.1	---	12.32	1.56	15.84	0.21	0.41	0.26	46.90	1.37	1.95	99.28	165	34.6	17	73	22	<2	4	23	112
2002Z112A	14.40	8.53	0.02	---	14.26	0.27	7.29	0.19	3.85	0.19	48.18	1.81	0.50	99.49	51	21.3	9	7	124	2	2	37	106
2002Z128A	9.96	0.92	0.03	---	7.46	0.03	12.19	0.01	<0.01	0.65	60.89	2.62	5.25	100.00	<20	135	130	3	40	<2	8	27	335
2002Z129A	14.56	0.57	<0.01	---	5.44	2.13	1.78	0.08	3.42	0.07	68.81	0.71	2.40	100.00	449	94.4	19	74	88	21	2	26	338
2002Z135D	12.68	0.96	<0.01	---	1.10	0.27	0.41	0.02	6.01	0.01	78.30	0.14	0.70	100.60	123	12.9	<2	6	71	5	2	19	83
2002Z137B	16.99	13.23	<0.01	---	16.01	0.11	6.83	0.14	0.79	<0.01	40.90	1.26	2.75	99.02	38	1.5	<2	<2	302	3	3	2	29
2002Z139B	13.72	8.06	0.02	---	11.86	0.04	6.07	0.17	3.24	0.23	47.01	1.98	7.85	100.20	<20	38.4	10	4	171	7	<2	29	164
2002Z140A	12.66	6.58	<0.01	---	15.48	0.50	4.60	0.26	3.73	0.75	48.05	3.65	3.00	99.26	919	80.8	32	42	705	2	3	64	343
2002Z143A	10.77	0.23	0.22	---	2.40	2.81	0.92	0.02	1.59	0.02	78.76	0.43	1.40	99.58	1180	63.7	7	114	26	17	<2	13	280
2002Z150A	13.22	0.29	<0.01	---	2.16	4.50	0.67	0.02	2.67	0.15	74.35	0.31	0.95	99.28	1400	62.9	13	142	29	22	2	33	147
2002Z164A	13.72	0.35	<0.01	---	2.17	5.72	0.70	0.02	1.81	0.18	74.20	0.27	0.85	100.00	1110	71.4	12	191	49	18	5	43	139
2002Z164A*	13.73	0.35	<0.01	---	2.16	5.71	0.70	0.02	1.81	0.18	74.11	0.27	0.90	99.90	1120	77.2	12	190	48	18	5	43	140
2002Z166A	15.80	2.10	<0.01	---	2.98	4.15	1.20	0.06	3.31	0.11	68.40	0.39	0.85	99.35	961	52.1	12	177	275	18	<2	12	123
2002Z167B	16.31	3.78	<0.01	---	3.96	3.63	1.50	0.08	3.08	0.13	66.20	0.50	0.80	100.00	1040	71.3	14	167	334	20	<2	25	142
2002Z167B*	16.33	3.78	<0.01	---	3.95	3.63	1.51	0.08	3.09	0.14	66.28	0.50	0.75	100.00	1030	74.3	16	168	333	20	<2	24	142
2002Z169A	16.42	9.29	0.02	---	11.21	0.13	6.47	0.16	2.77	0.25	48.92	1.93	2.75	100.30	371	54.3	16	5	712	11	<2	28	190
2002Z177A	11.12	10.37	0.04	---	13.94	1.35	6.58	0.21	2.97	1.00	46.52	3.70	1.00	98.78	886	268	113	68	980	6	2	43	434
2002Z185A	12.53	9.63	0.04	---	14.87	1.36	7.17	0.21	2.44	0.81	45.43	4.05	1.30	99.83	1350	180	89	71	850	10	2	40	405
2002Z195A	11.24	11.95	0.08	---	14.13	0.33	9.66	0.28	0.74	0.63	44.78	4.24	0.65	98.71	86	122	74	15	99	11	<2	30	354
2002Z197A	10.64	13.01	0.06	---	13.90	0.57	8.78	0.22	2.47	0.77	44.51	3.56	1.65	100.10	726	177	75	20	1190	7	<2	28	373
2002Z201A	9.38	0.65	0.01	---	2.94	1.97	1.23	0.03	2.03	0.04	80.86	0.40	0.80	100.30	555	47	8	71	107	13	2	16	211
2002Z209A	12.46	1.96	0.01	---	4.23	2.88	1.68	0.06	1.23	0.08	74.02	0.53	0.95	100.10	512	68.2	9	111	172	10	6	20	163
2002Z215A	12.75	0.55	<0.01	2.1	3.19	3.43	1.19	0.03	1.16	0.05	76.36	0.42	1.15	100.30	---	---	---	---	---	---	---	---	---
2002Z229A	11.10	13.02	0.03	---	14.30	0.46	10.27	0.20	1.20	0.73	43.52	4.05	0.50	99.37	135	125	64	15	241	7	4	34	322

Table 4. (continued)

Sample	Al2O3	CaO	Cr2O3	FeO	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI	Total	Ba	Ce	Nb	Rb	Sr	Th	U	Y	Zr
Analysis Unit	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2002Z230A	13.30	11.78	0.04	---	12.80	0.61	6.16	0.18	4.35	0.47	45.86	2.55	1.85	99.90	342	118	89	15	625	5	2	28	312
2002Z233A	16.73	9.54	0.01	---	10.92	0.48	5.75	0.19	3.54	0.19	50.75	0.76	0.60	99.45	116	28.1	<2	12	350	4	3	18	77
2002Z240A	13.40	0.70	<0.01	1.4	2.22	3.28	0.86	0.02	3.59	0.17	74.33	0.32	0.90	99.78	---	---	---	---	---	---	---	---	---
2002Z240A*	13.40	0.70	<0.01	1.5	2.23	3.28	0.86	0.02	3.58	0.17	74.32	0.32	0.80	99.67	---	---	---	---	---	---	---	---	---
2002Z240B	13.30	8.54	<0.01	---	15.79	1.18	5.82	0.28	2.46	0.40	47.97	2.95	0.75	99.44	185	44.9	22	31	137	<2	3	46	190
2002Z256A	14.82	9.62	0.05	---	12.05	0.23	9.51	0.18	2.15	0.21	48.09	1.78	0.65	99.33	84	34.4	10	5	329	2	<2	28	144
2002Z261A	12.46	9.79	0.04	---	14.09	0.71	6.25	0.19	3.92	0.70	42.86	4.52	4.85	100.40	489	123	88	29	595	3	3	32	410
2002Z261A*	12.44	9.77	0.04	---	14.06	0.71	6.22	0.19	3.91	0.70	43.01	4.51	4.80	100.40	488	118	89	30	595	3	3	32	409
2002Z270A	8.30	0.22	<0.01	---	2.00	0.40	1.07	0.03	3.21	0.05	83.55	0.32	0.95	100.10	108	29.1	6	18	44	10	<2	9	220
2002Z270B	11.64	9.21	0.05	---	13.55	0.39	8.68	0.17	3.35	1.02	44.80	3.70	2.55	99.12	296	248	183	22	578	11	2	37	428
2002Z299B	19.53	7.96	<0.01	---	9.54	1.72	3.41	0.17	1.35	0.34	52.84	1.10	1.50	99.45	858	56.2	9	64	477	8	<2	35	223
2002Z300A	16.33	10.47	0.02	---	11.48	1.36	5.44	0.15	3.22	0.17	48.13	2.43	0.50	99.69	208	14.7	6	65	271	<2	<2	16	61
2002Z301A	13.63	1.64	<0.01	2.1	3.05	4.83	0.75	0.06	2.86	0.13	71.33	0.37	0.45	99.08	---	---	---	---	---	---	---	---	---
2002Z306B	14.70	3.02	<0.01	---	3.54	3.27	1.01	0.06	2.82	0.12	69.79	0.58	0.60	99.51	924	70.9	13	145	274	18	4	29	166
2002Z318A	15.15	2.96	<0.01	---	3.19	3.51	1.00	0.06	2.95	0.11	68.80	0.41	0.70	98.84	756	80.6	12	164	237	19	<2	26	150
2002Z350B	13.99	8.71	<0.01	---	15.70	0.59	5.24	0.26	2.78	0.62	48.00	3.47	1.25	100.60	307	80.2	35	20	236	3	<2	48	311
2002Z353B	13.40	8.74	0.01	---	16.09	0.50	5.58	0.14	1.66	0.60	47.91	3.71	1.75	100.10	107	68.4	28	16	146	<2	2	53	309
2002Z353B*	13.38	8.74	0.01	---	16.15	0.50	5.58	0.14	1.68	0.60	47.93	3.69	1.70	100.10	107	71.6	28	16	145	<2	3	52	309
2002Z368A	15.39	9.08	0.02	---	11.90	0.39	6.43	0.21	4.32	0.15	49.52	1.53	0.50	99.44	77	11.1	2	4	131	7	3	34	101
2002Z373A	14.23	1.18	<0.01	1.9	2.72	4.79	0.59	0.03	2.75	0.18	71.75	0.41	0.90	99.51	---	---	---	---	---	---	---	---	---
2002Z375B	14.47	9.25	0.03	---	13.77	0.72	7.07	0.20	3.30	0.44	47.42	2.52	1.30	100.50	342	42.4	17	22	159	<2	<2	31	189
2002Z378C	13.93	8.06	<0.01	---	16.43	0.58	3.44	0.32	2.47	1.12	49.40	2.90	0.70	99.35	116	107	35	20	191	7	4	67	411
2002Z379B	14.55	9.34	0.02	---	13.43	0.64	6.10	0.20	3.15	0.36	48.17	2.33	0.95	99.22	99	55	17	21	106	6	<2	45	264
2002Z390A	13.93	9.63	0.04	---	7.72	0.18	9.66	0.14	3.31	0.05	52.25	0.46	2.00	99.37	75	3.6	<2	<2	176	5	3	11	33
2002Z390B	16.17	5.47	<0.01	---	7.87	0.71	2.47	0.13	4.41	0.14	61.43	0.96	0.80	100.60	132	9.7	5	8	255	4	2	28	97
2002Z414A	14.96	2.73	<0.01	---	2.74	3.98	1.13	0.03	2.98	0.09	70.64	0.39	0.60	100.30	718	52.6	16	209	223	19	<2	27	126
2002Z416A	13.80	0.88	<0.01	1.6	2.67	5.02	0.51	0.03	2.42	0.12	73.66	0.36	0.75	100.20	---	---	---	---	---	---	---	---	---
2002Z419B	15.71	10.18	0.03	---	11.01	1.42	6.61	0.15	1.65	0.19	50.00	1.08	1.65	99.68	318	26.2	3	72	441	2	6	25	88
2002Z421A	15.51	4.31	<0.01	---	4.60	3.55	1.92	0.08	2.79	0.16	64.03	0.63	1.95	99.52	1230	71.8	12	141	333	16	5	24	153
2002Z444B	16.67	5.35	<0.01	---	6.12	3.53	3.35	0.10	2.97	0.21	60.11	0.80	0.70	99.90	1730	58.4	13	140	456	15	6	22	203
2002Z445A	15.91	4.26	<0.01	---	4.86	3.56	2.07	0.07	2.73	0.17	64.11	0.66	1.40	99.80	1340	59.3	11	148	371	18	5	20	142
2002Z453B	16.28	9.87	<0.01	---	12.18	1.24	7.61	0.21	1.62	0.21	47.99	1.29	1.35	99.86	204	43.1	10	48	305	5	<2	35	114
2002Z453B*	16.28	9.91	<0.01	---	12.24	1.24	7.61	0.21	1.62	0.21	48.10	1.29	1.25	100.00	202	41.1	11	48	304	5	<2	36	114
2002Z456A	16.34	9.55	0.02	---	5.14	1.07	6.41	0.06	2.34	0.16	56.89	1.18	1.05	100.20	150	34.3	10	48	569	4	<2	21	109

Table 4. (continued)

Sample	Al2O3	CaO	Cr2O3	FeO	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI	Total	Ba	Ce	Nb	Rb	Sr	Th	U	Y	Zr
Analysis Unit	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2002Z459A	9.36	11.62	0.1	---	12.81	0.43	13.34	0.19	1.54	0.54	45.71	3.28	0.65	99.58	185	72.8	50	14	362	5	3	24	253
2002Z466A	14.32	1.53	<0.01	---	2.07	4.93	0.68	0.02	2.42	0.09	73.65	0.28	0.50	100.50	798	65.2	10	166	220	15	9	8	118
2002Z467B	10.06	12.16	0.11	---	13.24	0.48	11.44	0.18	1.74	0.44	44.61	3.41	0.85	98.71	91	85.7	59	11	243	4	3	21	252
2002Z514B	14.10	1.90	<0.01	---	1.86	4.26	0.45	0.03	2.83	0.09	73.81	0.26	0.40	100.00	1010	74.9	12	175	220	26	2	24	144
2002Z530A	12.64	0.96	<0.01	0.4	0.81	2.57	0.50	0.02	4.13	0.12	77.45	0.19	0.60	100.00	---	---	---	---	---	---	---	---	---
2002Z548B	16.61	6.65	<0.01	---	7.05	1.80	2.58	0.14	2.40	0.10	60.91	0.71	0.95	99.90	966	47	6	60	275	9	<2	21	118
2002Z549A	16.03	3.66	<0.01	---	4.88	3.31	2.05	0.08	2.87	0.17	65.08	0.68	1.55	100.40	1410	65.2	13	129	368	18	7	22	167
2002Z550A	15.70	3.65	<0.01	---	4.57	3.55	1.88	0.07	2.93	0.16	64.74	0.62	1.60	99.47	1380	69.3	9	149	362	19	6	25	157
2002Z563B	16.15	4.43	<0.01	---	5.25	3.05	1.81	0.07	3.28	0.17	64.06	0.65	0.95	99.87	1320	64.3	11	120	379	17	10	29	188
2002Z565A	16.23	10.81	0.03	---	10.58	0.28	7.97	0.16	3.05	0.15	48.73	1.41	0.40	99.80	141	13.1	3	5	195	2	<2	20	86
2002Z567B	12.18	6.56	0.02	---	9.79	0.81	4.95	0.21	1.57	0.17	61.21	1.55	0.60	99.60	1370	33.7	8	23	123	8	7	30	138
2002Z568B	8.75	1.09	<0.01	2.0	3.32	2.27	1.36	0.49	0.94	0.10	79.51	0.39	1.05	99.27	---	---	---	---	---	---	---	---	---
2002Z571A	14.39	10.16	0.03	---	11.86	0.94	6.76	0.35	2.61	0.16	48.18	1.33	3.15	99.90	1260	20.6	5	32	272	2	<2	28	101
2002Z571A*	14.37	10.15	0.03	---	11.90	0.94	6.75	0.35	2.60	0.16	48.18	1.32	3.15	99.90	1270	20.5	4	31	272	<2	<2	28	101
2002Z576A	14.70	9.55	<0.01	---	12.03	0.24	6.36	0.20	3.40	0.14	51.13	1.52	0.45	99.72	87	11.4	2	5	173	<2	2	31	99
2002Z579A	11.15	0.65	<0.01	3.1	4.71	2.35	1.41	0.07	0.92	0.08	76.73	0.49	1.55	100.10	---	---	---	---	---	---	---	---	---
2002Z579B	12.13	12.72	0.05	---	13.05	0.97	9.19	0.21	1.97	0.70	42.58	2.87	2.90	99.34	471	131	89	34	473	13	4	25	242
2002Z582A	12.97	13.16	0.07	---	14.80	1.33	7.46	0.22	1.12	0.65	43.28	3.15	1.75	100.00	829	111	108	45	520	3	2	21	270
2002Z586B	13.02	11.96	0.05	---	12.72	1.17	10.14	0.23	0.97	0.60	43.73	2.50	1.45	98.55	204	91.7	64	41	247	8	4	27	202
2002Z587A	15.34	3.00	<0.01	---	3.27	2.82	1.08	0.06	2.87	0.13	69.98	0.42	1.15	100.10	723	70.3	10	103	293	14	6	25	153
2002Z601A	9.80	0.53	<0.01	2.3	3.36	1.45	1.57	0.03	1.69	0.06	80.01	0.39	1.70	100.60	---	---	---	---	---	---	---	---	---
2002Z605A	11.87	1.89	<0.01	4.4	5.13	2.79	1.96	0.07	1.63	0.08	73.70	0.60	0.70	100.40	---	---	---	---	---	---	---	---	---
2002Z614A	16.17	0.62	0.01	4.0	5.67	3.54	2.06	0.05	0.94	0.06	68.72	0.78	1.30	99.90	---	---	---	---	---	---	---	---	---
2002Z614A*	16.14	0.62	0.01	3.9	5.66	3.53	2.06	0.05	0.94	0.06	68.87	0.78	1.30	100.00	---	---	---	---	---	---	---	---	---
2002Z618A	15.11	1.37	0.01	4.4	5.87	3.62	2.26	0.06	0.99	0.05	69.08	0.79	1.35	100.60	---	---	---	---	---	---	---	---	---
2002Z622A	16.18	0.40	<0.01	4.2	5.79	3.47	2.04	0.05	0.81	0.07	67.91	0.70	2.55	100.00	---	---	---	---	---	---	---	---	---
2002Z624A	12.73	0.69	<0.01	3.0	4.04	3.26	1.32	0.03	1.12	0.06	75.44	0.53	1.30	100.50	---	---	---	---	---	---	---	---	---
2002Z626A	13.86	0.58	<0.01	3.4	4.61	3.30	1.69	0.03	1.13	0.06	72.54	0.61	1.70	100.10	---	---	---	---	---	---	---	---	---
2002Z633A	14.79	2.87	0.01	4.3	5.81	2.86	2.92	0.07	2.20	0.17	66.58	0.76	0.85	99.88	---	---	---	---	---	---	---	---	---
2002Z637A	18.68	4.75	<0.01	---	4.39	2.81	2.17	0.07	3.77	0.22	61.24	0.75	0.70	99.53	554	90.8	11	155	364	25	3	23	224

Table 5. Detection limits for geochemical analyses.

Analytical methods include: FA-ICPMS = Fire Assay-Inductively Coupled Plasma Mass Spectroscopy, ICP-AES = Inductively Coupled Plasma - Atomic Emission Spectroscopy, AAS = Atomic Absorption Spectroscopy.

NOTE: * = possibly incomplete digestion dependent on mineralogy.

Element	Units	Lower Detection Limit	Upper Detection Limit	Analytical Method
Au	ppb	1	2,000	FA-ICPMS
Ag	ppm	0.2	10	ICP-AES
Al*	percent	0.01	15	ICP-AES
As	ppm	3	10,000	ICP-AES
Ba*	ppm	1	10,000	ICP-AES
Be	ppm	0.5	2,500	ICP-AES
Bi	ppm	5	10,000	ICP-AES
Ca*	percent	0.01	15	ICP-AES
Cd	ppm	1	10,000	ICP-AES
Co	ppm	1	10,000	ICP-AES
Cr*	ppm	1	10,000	ICP-AES
Cu	ppm	0.5	10,000	ICP-AES
Fe*	percent	0.01	15	ICP-AES
K*	percent	0.01	15	ICP-AES
La*	ppm	0.5	10,000	ICP-AES
Li*	ppm	1	10,000	ICP-AES
Mg*	percent	0.01	15	ICP-AES
Mn*	ppm	2	10,000	ICP-AES
Mo	ppm	1	10,000	ICP-AES
Na*	percent	0.01	15	ICP-AES
Ni*	ppm	1	10,000	ICP-AES
P*	percent	0.01	15,000	ICP-AES
Pb	ppm	2	10,000	ICP-AES
Pd	ppb	1	2,000	FA-ICPMS
Pt	ppb	0.5	2,000	FA-ICPMS
Sb*	ppm	5	10,000	ICP-AES
Sc*	ppm	0.5	10,000	ICP-AES
Sn*	ppm	10	10,000	ICP-AES
Sr*	ppm	0.5	5,000	ICP-AES
Ti*	percent	0.01	15	ICP-AES
V*	ppm	2	10,000	ICP-AES
W*	ppm	10	10,000	ICP-AES
Y*	ppm	0.5	10,000	ICP-AES
Zn*	ppm	0.5	10,000	ICP-AES
Zr*	ppm	0.5	10,000	ICP-AES

Table 6. Detection limits for major-oxide, minor oxide, and trace element analyses. Analytical methods include: XRF = X-Ray Fluorescence Spectroscopy, CHM = Titration, and ICPMS = Inductively Coupled Plasma Mass Spectrometry. Note: LOI* = Loss On Ignition. Fe₂O₃* = Total iron as Fe₂O₃.

Element	Units	Lower Detection Limit	Upper Detection Limit	Analytical Method
Al ₂ O ₃	percent	0.01	100.00	XRF
CaO	percent	0.01	100.00	XRF
Cr ₂ O ₃	percent	0.01	100.00	XRF
FeO	percent	0.1	100.00	CHM
Fe ₂ O ₃ *	percent	0.01	100.00	XRF
K ₂ O	percent	0.01	100.00	XRF
MgO	percent	0.01	100.00	XRF
MnO	percent	0.01	100.00	XRF
Na ₂ O	percent	0.01	100.00	XRF
P ₂ O ₅	percent	0.01	100.00	XRF
SiO ₂	percent	0.01	100.00	XRF
TiO ₂	percent	0.01	100.00	XRF
LOI*	percent	0.01	100.00	XRF
Total	percent	0.01	105.00	Calculation
Ba	ppm	20	4,000	XRF
Ce	ppm	0.1	10,000	ICPMS
Nb	ppm	2	4,000	XRF
Rb	ppm	2	4,000	XRF
Sr	ppm	2	4,000	XRF
Th	ppm	2	4,000	XRF
U	ppm	2	4,000	XRF
Y	ppm	2	4,000	XRF
Zr	ppm	3	4,000	XRF