

VSP Preliminary Data Sheet

135° Source
46lb

90° Source
100lb by
itself

Date: 11 AUG 98 Type of Phones 070

1. Well Name C4 (URISP)

2. Location of Well

X= 9995.22 Y= 9991.53 Z= 849.93

Casing Elevation: 849.93

3. Depth to top of water table (measured from CE) (7.28 ft) = 2.2189 m → +847.711 m elev

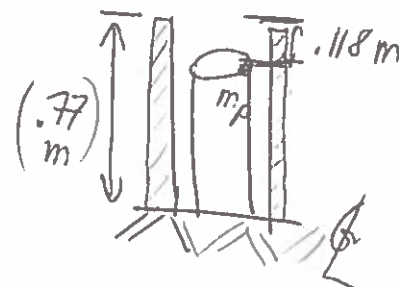
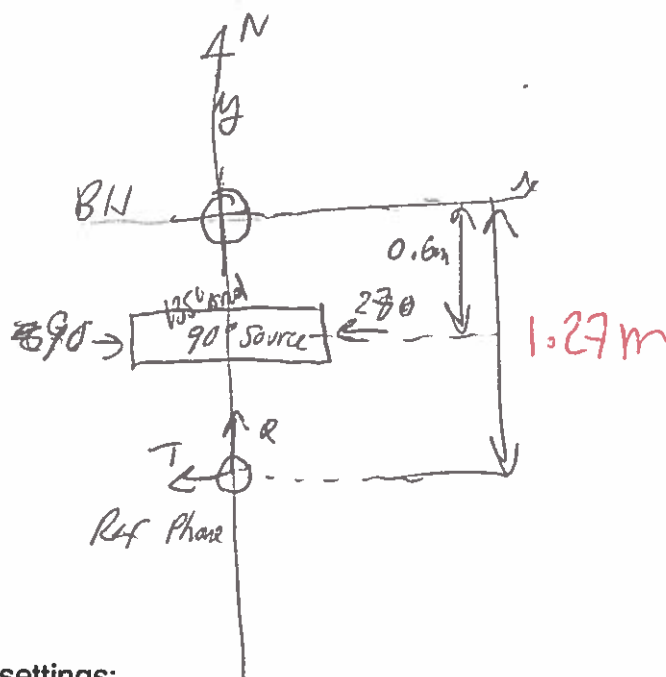
4. Casing Elevation, distance above ground level= (.77 - .118) m = .652 m

5. Reference phone offset from borehole= 1.27 m South

6. Reference phone depth below ground level= 0

7. Source Offset from borehole= 0.60 m

8. Sketch of setup:



$$20.51 + (1.02) = T/D$$

$$T/D = 21.53 \text{ m}$$

9. Blue Box switch settings:

Channel	Component
<u>1</u>	Vertical
<u>2</u>	Longitudinal (radial)
<u>3</u>	Transverse

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
Casing Elevation: 0.652 m above G.L.

Azimuth x-axis: East

Azimuth y-axis: North

Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93

Channel Configuration: Borehole Phone V=Channel 1 R=Channel 2 T=Channel 3

Reference Phone V=Channel 4 R=Channel 5 T=Channel 6

Date: 11 AUG 98 Location: C4 well Ukisp

High-Cut 1000 Low-Cut 4 Sample Int. 0.002 Number Samples 2500

Reference Phone: Offset: _____ m

Azimuth

Elev. 0 m below G.L.

X = 0 m

Y = -1.27 m

Ref. Polarization: Az

V

R

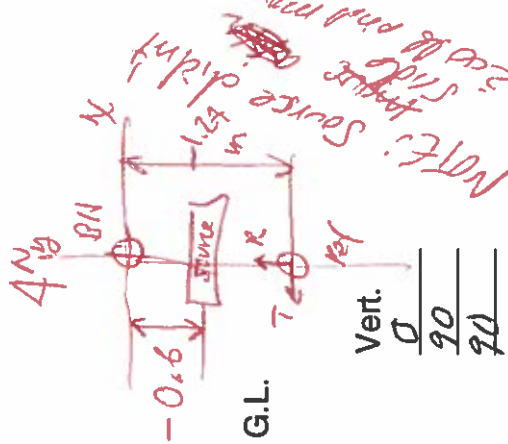
T

Vert.

0

90

90



Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
SRC40001	1	15m					0	-0.6m	270	90
	2	15m							90	90
	3	15m							270	90
	4	15m							90	90
	5	15m							270	40
	6	15m							90	90
	7	15m							270	90
	8	15m							90	90
	9	15m							270	135
	10	15m							90	135

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$$\Sigma = +847.7111m$$

Source Test

200lb Hold Down
100lb Hold Down
200lb Hold Down
300lb

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 652 m above G.L.
 Azimuth x-axis: East
 Azimuth y-axis: North
 Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93
 Channel Configuration: Borehole Phone V=Channel 1 R=Channel 2 T=Channel 3
 Reference Phone V=Channel 4 R=Channel 5 T=Channel 6
 Ref. Polarization: Az 0 V 0 R 0 T 270
 Offset: 0 m
 Azimuth 0 m below G.L.
 Elev. 0 m
 X = 0 m
 Y = -1.27 m
 Vert. 0
90
90

Date: 11/13/98 Location: C4 well U&SP
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
<u>1</u>	<u>1</u>	<u>21.0</u>					<u>0</u>	<u>-0.60</u>	<u>270</u>	<u>135</u>
<u>2</u>	<u>2</u>	<u>21.0</u>							<u>90</u>	<u>1</u>
<u>3</u>	<u>3</u>	<u>20.75</u>							<u>270</u>	
<u>4</u>	<u>4</u>	<u>20.75</u>							<u>90</u>	
<u>5</u>	<u>5</u>	<u>20.50</u>							<u>270</u>	
<u>6</u>	<u>6</u>	<u>20.50</u>							<u>90</u>	
<u>7</u>	<u>7</u>	<u>20.25</u>							<u>270</u>	
<u>8</u>	<u>8</u>	<u>20.25</u>							<u>90</u>	
<u>9</u>	<u>9</u>	<u>20.0</u>							<u>270</u>	
<u>10</u>	<u>10</u>	<u>20.0</u>							<u>90</u>	<u>1</u>

11/13
Regular survey

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 1652 m above G.L.
 Azimuth x-axis: 90
 Azimuth y-axis: 0
 Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93
 Channel Configuration: Borehole Phone V=Channel 1 R=Channel 2 T=Channel 3
 Reference Phone V=Channel 4 R=Channel 5 T=Channel 6
 Ref. Polarization: Az 0 V 0 R 0 T 270
 Offset: 0 m
 Azimuth 0 m below G.L.
 Elev. 0 m
 X = 0 m
 Y = -1.27 m
 Vert. 0
90
90

Date: 11 AUG 98 Location: C-4 well URSIP
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
	<u>11</u>	<u>19.75</u>					<u>0</u>	<u>-1.60</u>	<u>270</u>	<u>135</u>
	<u>12</u>	<u>19.75</u>							<u>90</u>	
	<u>13</u>	<u>19.50</u>							<u>270</u>	
	<u>14</u>	<u>19.50</u>							<u>90</u>	
	<u>15</u>	<u>19.25</u>							<u>270</u>	
	<u>16</u>	<u>19.25</u>							<u>90</u>	
	<u>17</u>	<u>19.0</u>							<u>270</u>	
	<u>18</u>	<u>19.0</u>							<u>90</u>	
	<u>19</u>	<u>18.75</u>							<u>270</u>	
	<u>20</u>	<u>18.75</u>							<u>90</u>	<u>V</u>

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 652 m above G.L.
 Azimuth x-axis: 90
 Azimuth y-axis: 0
 Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93
 Channel
 Configuration: Borehole Phone
 V=Channel 1 Reference Phone
 R=Channel 2 V=Channel 4
 T=Channel 3 R=Channel 5
 T=Channel 6 Az
 Ref. Polarization: V 0 R 0 T 270
 Vert. 0 90 90
 Offset: 0 m
 Azimuth 0 m below G.L.
 X = 0 m
 Y = -1.27 m

Date: 11 AUG 98 Location: C4 well U&SP
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
	<u>21</u>	<u>18.50</u>					<u>0</u>	<u>-60</u>	<u>270</u>	<u>135</u>
	<u>22</u>	<u>18.50</u>							<u>90</u>	<u>1</u>
	<u>23</u>	<u>18.25</u>							<u>270</u>	
	<u>24</u>	<u>18.25</u>							<u>90</u>	
	<u>25</u>	<u>18.0</u>							<u>270</u>	
	<u>26</u>	<u>18.0</u>							<u>90</u>	
	<u>27</u>	<u>17.75</u>							<u>270</u>	
	<u>28</u>	<u>17.75</u>							<u>90</u>	
	<u>29</u>	<u>17.50</u>							<u>270</u>	
	<u>30</u>	<u>17.50</u>							<u>90</u>	<u>✓</u>

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BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
Casing Elevation: 652 m above G.L.

Azimuth x-axis: 90

Azimuth y-axis: 0

Well Coord: X = 9995.22

Y = 9991.53

Z = 849.93

Channel

Configuration:

Borehole Phone

V=Channel 1

R=Channel 2

T=Channel 3

Reference Phone

V=Channel 4

R=Channel 5

T=Channel 6

Ref. Polarization:

Az 0

V 0

R 0

T 270

Vert. 0

90

90

90

90

90

90

90

90

90

90

90

90

90

90

90

Reference Phone:

Offset: 0 m

Azimuth 0

Elev. 0 m below G.L.

X = 0 m

Y = -1.29 m

Ref. Polarization:

Az 0

V 0

R 0

T 270

Vert. 0

90

90

90

90

90

90

90

90

90

90

90

90

90

90

90

90

90

90

90

90

90

90

90

90

90

Date: 11 AUG 98

Location: C4 Well UESP

High-Cut 1000

Low-Cut 4

Sample Int. 0.002

Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
	<u>31</u>	<u>17.25</u>					<u>0</u>	<u>-1.60</u>	<u>270</u>	<u>135</u>
	<u>32</u>	<u>17.25</u>							<u>90</u>	<u>1</u>
	<u>33</u>	<u>17.0</u>							<u>270</u>	<u>1</u>
	<u>34</u>	<u>17.0</u>							<u>90</u>	<u>1</u>
	<u>35</u>	<u>16.75</u>							<u>270</u>	<u>1</u>
	<u>36</u>	<u>16.75</u>							<u>90</u>	<u>1</u>
	<u>37</u>	<u>16.50</u>							<u>270</u>	<u>1</u>
	<u>38</u>	<u>16.50</u>							<u>90</u>	<u>1</u>
	<u>39</u>	<u>16.25</u>							<u>270</u>	<u>1</u>
	<u>40</u>	<u>16.25</u>							<u>270</u>	<u>1</u>

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 1652 m above G.L.
 Azimuth x-axis: 90
 Azimuth y-axis: 0
 Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93
 Channel Configuration: V=Channel 1 R=Channel 2 T=Channel 3
 Reference Phone: V=Channel 4 R=Channel 5 T=Channel 6
 Reference Phone: Azimuth 0 Elev. 0 m below G.L.
 X = 0 m Y = -127 m
 Ref. Polarization: V 0 R 0 T 270
 Vert. 0 90 90

Date: 11 AUG 98 Location: C4 Well UESP
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Offset	Azimuth	Elev.	X	Y	Vertical
	<u>41</u>	<u>16.0</u>						<u>0</u>	<u>-60</u>	<u>135</u>
	<u>42</u>	<u>16.0</u>								
	<u>43</u>	<u>15.75</u>								
	<u>44</u>	<u>15.75</u>								
	<u>45</u>	<u>15.50</u>								
	<u>46</u>	<u>15.50</u>								
	<u>47</u>	<u>15.25</u>								
	<u>48</u>	<u>15.25</u>								
	<u>49</u>	<u>15.0</u>								
	<u>50</u>	<u>15.0</u>								

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BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 652 m above G.L.
 Azimuth x-axis: 90
 Azimuth y-axis: 0
 Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93
 Channel Configuration:
 Borehole Phone
 V=Channel 1
 R=Channel 2
 T=Channel 3
 Reference Phone
 V=Channel 4
 R=Channel 5
 T=Channel 6
 Location: C-4 well UKSP
 Date: 11 AUG 98
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500
 Reference Phone: Offset: m
 Azimuth
 Elev. 0 m below G.L.
 X = 0 m
 Y = -1.27 m
 Ref. Polarization: Az 0
 V 0
 R 0
 T 270
 Vert. 0
90
90

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
	51	14.75					0	-60	270	135
	52	14.75							90	
	53	14.50							270	
	54	14.50							90	
	55	14.25							270	
	56	14.25							90	
	57	14.0							270	
	58	14.0							90	
	59	13.75							270	
	60	13.75							90	

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: .652 m above G.L.
 Azimuth x-axis: 90
 Azimuth y-axis: 0
 Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93
 Channel Configuration: Borehole Phone V=Channel 1 Reference Phone V=Channel 4 Vert. 0
 R=Channel 2 R=Channel 5 90
 T=Channel 3 T=Channel 6 90

Date: 11 AUG 98 Location: C4 well UKISP
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
	<u>61</u>	<u>13.50</u>					<u>0</u>	<u>-.60</u>	<u>270</u>	<u>135</u>
	<u>62</u>	<u>13.50</u>							<u>90</u>	<u>1</u>
	<u>63</u>	<u>13.25</u>							<u>270</u>	<u>1</u>
	<u>64</u>	<u>13.25</u>							<u>90</u>	<u>1</u>
	<u>65</u>	<u>13.0</u>							<u>270</u>	<u>1</u>
	<u>66</u>	<u>13.0</u>							<u>90</u>	<u>1</u>
	<u>67</u>	<u>12.75</u>							<u>270</u>	<u>1</u>
	<u>68</u>	<u>12.75</u>							<u>90</u>	<u>1</u>
	<u>69</u>	<u>12.50</u>							<u>270</u>	<u>1</u>
	<u>70</u>	<u>12.50</u>							<u>90</u>	<u>1</u>

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BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 652 m above G.L.
 Azimuth x-axis: 90
 Azimuth y-axis: 0
 Well Coord: X = 7995.22 Y = 7991.53 Z = 849.93
 Channel Configuration: Borehole Phone V=Channel 1 R=Channel 2 T=Channel 3
 Reference Phone V=Channel 4 R=Channel 5 T=Channel 6
 Ref. Polarization: V 0 R 0 T 270
 Offset: 0 m
 Azimuth 0 m below G.L.
 X = 0 m
 Y = -1.27 m
 Vert. 0
90
90

Date: 11 AUG 98 Location: C4 Well UKISP
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
	<u>71</u>	<u>12.25</u>					<u>0</u>	<u>-60</u>	<u>270</u>	<u>135</u>
	<u>72</u>	<u>12.25</u>							<u>90</u>	
	<u>73</u>	<u>12.0</u>							<u>270</u>	
	<u>74</u>	<u>12.0</u>							<u>90</u>	
	<u>75</u>	<u>11.75</u>							<u>270</u>	
	<u>76</u>	<u>11.75</u>							<u>90</u>	
	<u>77</u>	<u>11.50</u>							<u>270</u>	
	<u>78</u>	<u>11.50</u>							<u>90</u>	
	<u>79</u>	<u>11.25</u>							<u>270</u>	
	<u>80</u>	<u>11.25</u>							<u>90</u>	

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BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 652 m above G.L.
 Azimuth x-axis: 90
 Azimuth y-axis: 0
 Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93
 Channel Configuration: Borehole Phone V=Channel 1 Reference Phone V=Channel 4 Az 0
 V=Channel 2 R=Channel 5 R 0
 T=Channel 3 T=Channel 6 T 270
 Date: 11 AUG 98 Location: C4 Well UK15P
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Offset	Azimuth	Elev.	X	Y	Vertical
	81	11.0						0	-60	270 135
	82	11.0								90
	83	10.75								270
	84	10.75								90
	85	10.50								270
	86	10.50								90
	87	10.25								270
	88	10.25								90
	89	10.0								270
	90	10.0								90

11:54

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
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 Azimuth x-axis: 90
 Azimuth y-axis: 0
 Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93
 Channel Configuration: Borehole Phone V=Channel 1 R=Channel 2 T=Channel 3
 Reference Phone V=Channel 4 R=Channel 5 T=Channel 6
 Ref. Polarization: V 0 R 0 T 270
 Offset: 0 m
 Azimuth 0 m below G.L.
 X = 0 m
 Y = -1.27 m
 Vert. 0
90
90

Date: 11 AUG 98 Location: C4 Well UKISP
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
	<u>91</u>	<u>9.15</u>					<u>0</u>	<u>-60</u>	<u>270</u>	<u>135</u>
	<u>92</u>	<u>9.15</u>							<u>90</u>	
	<u>93</u>	<u>9.50</u>							<u>270</u>	
	<u>94</u>	<u>9.50</u>							<u>90</u>	
	<u>95</u>	<u>9.25</u>							<u>270</u>	
	<u>96</u>	<u>9.25</u>							<u>90</u>	
	<u>97</u>	<u>9.0</u>							<u>270</u>	
	<u>98</u>	<u>9.0</u>							<u>90</u>	
	<u>99</u>	<u>8.75</u>							<u>270</u>	
	<u>100</u>	<u>8.75</u>							<u>90</u>	<u>✓</u>

2/21/98

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: .652 m above G.L.
 Azimuth x-axis: 90
 Azimuth y-axis: 0
 Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93
 Channel Configuration: Borehole Phone V=Channel 1 R=Channel 2 T=Channel 3
 Reference Phone V=Channel 4 R=Channel 5 T=Channel 6
 Ref. Polarization: V 0 R 0 T 270
 Offset: 0 m
 Azimuth 0 m below G.L.
 X = 0 m
 Y = -1.27 m
 Vert. 0
90
90

Date: 11 AUG 98 Location: C4 Well UKISP
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
	<u>101</u>	<u>8.50</u>					<u>0</u>	<u>-0.6</u>	<u>270</u>	<u>135</u>
	<u>102</u>	<u>8.50</u>					<u>1</u>	<u>1</u>	<u>90</u>	<u>1</u>
	<u>103</u>	<u>8.25</u>					<u>1</u>	<u>1</u>	<u>270</u>	<u>1</u>
	<u>104</u>	<u>8.25</u>					<u>1</u>	<u>1</u>	<u>90</u>	<u>1</u>
	<u>105</u>	<u>8.0</u>					<u>1</u>	<u>1</u>	<u>270</u>	<u>1</u>
	<u>106</u>	<u>8.0</u>					<u>1</u>	<u>1</u>	<u>90</u>	<u>1</u>
	<u>107</u>	<u>7.75</u>					<u>1</u>	<u>1</u>	<u>270</u>	<u>1</u>
	<u>108</u>	<u>7.75</u>					<u>1</u>	<u>1</u>	<u>90</u>	<u>1</u>
	<u>109</u>	<u>7.50</u>					<u>1</u>	<u>1</u>	<u>270</u>	<u>1</u>
	<u>110</u>	<u>7.50</u>					<u>1</u>	<u>1</u>	<u>90</u>	<u>1</u>

12:03

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 652 m above G.L.
 Azimuth x-axis: 90
 Azimuth y-axis: 0
 Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93
 Channel Configuration: Borehole Phone V=Channel 1 R=Channel 2 T=Channel 3
 Reference Phone V=Channel 4 R=Channel 5 T=Channel 6
 Ref. Polarization: V 0 R 0 T 270
 Offset: Azimuth 0 Elev. 0 m below G.L.
 X = 0 m Y = -1.27 m

Date: 11 AUG 98 Location: C4 well U&SP Number Samples 2500
 High-Cut 1000 Low-Cut 4 Sample Int. .0002

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
	<u>111</u>	<u>7.25</u>					<u>0</u>	<u>-0.60</u>	<u>270</u>	<u>135</u>
	<u>112</u>	<u>7.25</u>					<u>↑</u>		<u>90</u>	<u>↑</u>
	<u>113</u>	<u>7.0</u>					<u>↑</u>		<u>270</u>	<u>↑</u>
	<u>114</u>	<u>7.0</u>					<u>↑</u>		<u>90</u>	<u>↑</u>
	<u>115</u>	<u>6.75</u>					<u>↑</u>		<u>270</u>	<u>↑</u>
	<u>116</u>	<u>6.75</u>					<u>↑</u>		<u>90</u>	<u>↑</u>
	<u>117</u>	<u>6.50</u>					<u>↑</u>		<u>270</u>	<u>↑</u>
	<u>118</u>	<u>6.50</u>					<u>↑</u>		<u>90</u>	<u>↑</u>
	<u>119</u>	<u>6.25</u>					<u>↑</u>		<u>270</u>	<u>↑</u>
	<u>120</u>	<u>6.25</u>					<u>↑</u>		<u>90</u>	<u>↑</u>

12:00

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole

Casing Elevation: .652 m above G.L.

Azimuth x-axis: 90

Azimuth y-axis: 0

Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93

Channel Borehole Phone

V=Channel 1

R=Channel 2

T=Channel 3

Reference Phone

V=Channel 4

R=Channel 5

T=Channel 6

Reference Phone:

Azimuth

Elev. 0 m below G.L.

X = 0 m

Y = -1.27 m

Ref. Polarization:

V

R

T

Vert.

0

90

90

Date: 11 AUG 98

Location: C4 well UKISP

High-Cut 1000 Low-Cut 4

Sample Int. .0002

Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
	121	6.0					0	-60	270	135
	122	6.0							90	
	123	5.75							270	
	124	5.75							90	
	125	5.50							270	
	126	5.50							90	
	127	5.25							270	
	128	5.25							90	
	129	5.0							270	
	130	5.0							90	

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 652 m above G.L.
 Azimuth x-axis: 90
 Azimuth y-axis: 0
 Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93
 Channel Configuration: Borehole Phone V=Channel 1 R=Channel 2 T=Channel 3
 Reference Phone V=Channel 4 R=Channel 5 T=Channel 6
 Ref. Polarization: V 0 R 0 T 270
 Offset: 0 m
 Azimuth 0 m below G.L.
 X = 0 m
 Y = -1.27 m
 Vert. 0
90
90

Date: 11 AUG 98 Location: C4 well UKISP
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
	131	4.75					0	-60	270	135
	132	4.75							90	
	133	4.50							270	
	134	4.50							90	
	135	4.25							270	
	136	4.25							90	
	137	4.0							270	
	138	4.0							90	
	139	3.75					V		270	
	140	3.75					V		90	

12.1.19

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: .652 m above G.L.
 Azimuth x-axis: 90
 Azimuth y-axis: 0
 Well Coord: X = 7995.22 Y = 7991.53 Z = 849.93
 Channel Configuration: Borehole Phone V=Channel 1 R=Channel 2 T=Channel 3
 Reference Phone V=Channel 4 R=Channel 5 T=Channel 6
 Ref. Polarization: V 0 R 0 T 270
 Offset: m
 Azimuth
 Elev. 0 m below G.L.
 X = 0 m
 Y = -1.27 m
 Vert. 0
90
90

Date: 11 AUG 98 Location: C-4 well UKISP
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Azimuth	Elev.	X	Y	Azimuth	Vertical
	141	3.50					0	-1.60	270	135
	142	3.50							90	
	143	3.25							270	
	144	3.25							90	
	145	3.0							270	
	146	3.0							90	
	147	2.75							270	
	148	2.75							90	
	149	2.50							270	
	150	2.50							90	

12:23

BSU GEOPHYSICS VSP OBSERVER'S LOG

Coordinate System Origin at Borehole
 Casing Elevation: 652 m above G.L.
 Azimuth x-axis: 90
 Azimuth y-axis: 0
 Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93
 Channel Configuration: V=Channel 1 Reference Phone V=Channel 4
 R=Channel 2 R=Channel 5
 T=Channel 3 T=Channel 6
 Ref. Polarization: Az 0 Vert. 0
 V 0 R 90
 T 90

Date: 11 AUG 98 Location: C4 well UKISP
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

Shot		Borehole Phone			Source			Source Polarization		
Rec.	File	Depth	Elev.	Offset	Offset	Azimuth	Elev.	X	Y	Vertical
	<u>151</u>	<u>2.25</u>						<u>0</u>	<u>- .60</u>	<u>135</u>
	<u>152</u>	<u>2.25</u>						<u>1</u>	<u>1</u>	<u>1</u>
	<u>153</u>	<u>2.0</u>						<u>1</u>	<u>1</u>	<u>1</u>
	<u>154</u>	<u>2.0</u>						<u>1</u>	<u>1</u>	<u>1</u>
	<u>155</u>	<u>1.75</u>						<u>1</u>	<u>1</u>	<u>1</u>
	<u>156</u>	<u>1.75</u>						<u>1</u>	<u>1</u>	<u>1</u>
	<u>157</u>	<u>1.50</u>						<u>1</u>	<u>1</u>	<u>1</u>
	<u>158</u>	<u>1.50</u>						<u>1</u>	<u>1</u>	<u>1</u>
	<u>159</u>	<u>1.25</u>						<u>1</u>	<u>1</u>	<u>1</u>
	<u>160</u>	<u>1.25</u>						<u>1</u>	<u>1</u>	<u>1</u>

12:21

Coordinate System Origin at Borehole
Casing Elevation: 652 m above G.L.
Azimuth x-axis: 90
Azimuth y-axis: 0
Well Coord: X = 9995.22 Y = 9991.53 Z = 849.93
Channel Borehole Phone V=Channel 1
R=Channel 2
T=Channel 3
Configuration: Borehole Phone V=Channel 4
R=Channel 5
T=Channel 6
Reference Phone
Off-set: _____ m
Azimuth _____
Elev. 0 _____ m below G.L.
X = 0 _____ m
Y = -1.27 _____ m
Ref. Polarization: Az _____
V _____
R _____
T _____
Vert. 0
90
90

Date: 11 AUG 98 Location: C 4 well UKISP
 High-Cut 1000 Low-Cut 4 Sample Int. .0002 Number Samples 2500

[illegible]

18.33
N10°E
Bow
Spin
on
diff
gr

VSP Check List

Project: C4 well URISP

Date: 11 AUG 98

Odometer Start: 15454.4 Finish: 15472.7
Time Out: 8:45 Time In: 14:00

18.3mi

Item	Out	In	Comment
BHG-2 Borehole Geophone	✓		
BHGC-1 Control Box (Blue)	✓		
Cable: Spool to BHGC-1	✓		
Cable: BHGC-1 to Bison	✓		
Ban/Alligator Power Cables BHGC-1	✓		
OYO 3-c Reference Phone (Blue)	✓		
Dummy tool	✓		
Snatch Block and Come-a-long	✓		
Bison Seismograph	✓		
90° Hammer Source + Sand Bags			
Vertical Hammer Source + Sand Bags			
135° Hammer Source	✓		
WD-40 and Black Tape	✓		
Observer's Sheets/Note Book	✓		
Rope	✓		
Claw Hammer and Large Nails	✓		
Tape measure (50m)	✓		
Gloves	✓		
Compass and Maps	✓		
24Volt Clamp Battery	✓		
Gas Card & Keys	✓		
Water Table Logging Probe			

Yellow Tool Box (Bison)