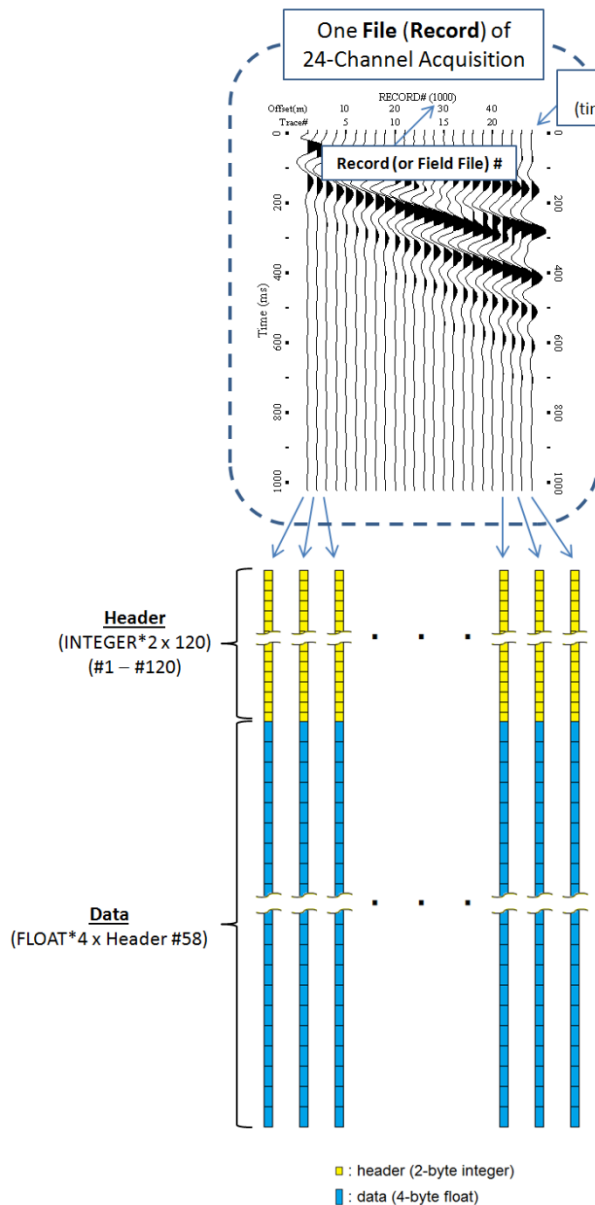


Data Structure of ParkSEIS (PS) Format

Each trace consists of 120 elements (#1 - #120) of "header" (INTEGER*2/element) followed by X number of data elements (FLOAT*4/element) with X specified in header #58. Diagram below illustrates the overall structure of PS format. The key header elements are specified in the table below. Full description of all (120) header elements is presented in the next pages.



Key Header Elements* Used in ParkSEIS®

#	Usage
1	data type (should be '0')
8	recording channel number
14	trace number (in each record or file) (=recording channel number)
15	trace-identification code (should be '1')
18	distance unit (0=feet, 1=meters)
19	offset (from source) multiplied by the factor specified in #35
35	multiplication factor (for example, 10)
36	X-coordinate of receiver for this trace multiplied by #35
37	Y-coordinate of receiver for this trace multiplied by #35
38	Z-coordinate of receiver for this trace multiplied by #35
39	X-coordinate of source for this trace multiplied by #35
40	Y-coordinate of source for this trace multiplied by #35
41	Z-coordinate of source for this trace multiplied by #35
57	receiver spacing multiplied by #35
58	number of samples per trace
59	sampling interval in microseconds
60	data flag (floating point=21930 and should be this value)
86	receiver station number
87	source station number
88	last trace flag for this record (1=last trace, 0=not last trace)
92	record number (=source sequence number) (this is the way ParkSEIS distinguishes different records in the same file)

Minimum elements to be specified for a record to be displayed by ParkSEIS

*All other elements can be filled with zero ('0').

Note those elements related to offset and surface coordinates (19, 35, 36-41, 86-87) can be ignored if not available and can be inserted afterward through the source/receiver (SR) setup process in ParkSEIS.

Full Description of ParkSEIS (PS) Header⁺ (Headers in Use as of 9/1/2014)

Word#	Description
1	Data type: 0 = raw field; 1 = CDP gather; 2 = CDP stacked; 3 = record order (record-number index and trace-number index based on values in trace-header words 3 and 4, respectively); 4 = velocity-scan data
2	Total recording channels
3	Trace-header word of record number for this data set: 8 = common recording channel number, 12 = common depth point, 19 = common offset, 86 = common receiver station number, 87 = common source station number 92 = common source sequence number (For OT, 0=Active, 1=Roadside Passive, 2=Remote Passive)
4	Trace-header word of trace number within each record (0 = input order of seismic input data)
5	Trace-direction flag for sorted traces within each record: 1 = ascending; -1 = descending
6	Original field-record number
7	
8	Recording-channel number
9	
10	Repeated shot number (at the same station)
11	Time/depth flag and multiplication factor (about 1000) to fit word 57 into 16 bits: 0=time; 1 or more=depth
12	Common-Mid-Point (CMP) number
13	
14	Trace number within each record
15	Trace-identification code: 1 = seismic data; 2 = dead; 9 = velocity flag
16	Number of vertically summed traces yielding this trace
17	Number of horizontally summed traces yielding this trace
18	Feet/meter distance dimension flag: 0=feet; 1=meters
19	Offset (distance from source to receiver) after multiplication by word 35
20	
21**	Receiver-group elevation
22	
23**	Source elevation
24	
25	
26	
27**	Datum elevation
28	MASW Survey type (0=Active, 1=Passive, 2=Active/Passive Combined) (For OT, 1=Quad1 used)
29	MASW Receiver Array Type (1=1D, 2=2D) (For OT, 1=Quad2 used)
30	For OT, 1=Quad3 used
31	For OT, 1=Quad4 used
32	If > 0, Azimuth Data Saved
33	Fk-filtering working area
34	Fk-filtering working area
35	Multiplication factor (e.g., 10) for horizontal distance determined by the 3rd parameter (e.g., 10) in "*_LOCATION" and "*_COORDINATE" key words in "...\\INI\\SEG22KGSKEY.TXT" during format
36	X-coordinate of receiver after multiplied by word 35 (for OT, always multiplied by 10)
37	Y-coordinate of receiver after multiplied by word 35 (for OT, always multiplied by 10)
38	Z-coordinate of receiver after multiplied by word 35 (for OT, always multiplied by 10)

Word#	Description
39	X-coordinate of source after multiplied by word 35 (for OT, always multiplied by 10)
40	Y-coordinate of source after multiplied by word 35 (for OT, always multiplied by 10)
41	Z-coordinate of source after multiplied by word 35 (for OT, always multiplied by 10)
42	Reference X-coordinate for 2D Receiver Array after multiplied by word 35
43	Minimum X used to process OT after multiplied by word 35
44	Maximum X used to process OT after multiplied by word 35
45	
46	Offline offset for cylindrical spreading for OT, or receiver spacing x 100 (for air-wave display on OT)
47	
48	
49	
50*	Source static correction (milliseconds)
51*	Receiver-group static correction (milliseconds)
52*	Total static correction (in number of samples) that has been applied to this trace (zero if no static has been applied)
53	
54	
55	Recording-delay time (milliseconds)
56	-55 if stations were inserted by the program (PS)
57	Receiver spacing after multiplied by word 35
58	Number samples in this trace
59	Sample interval in microseconds for this trace
60	Integer/floating point data flag: 21930 = floating point; any other value indicates integer data
61	
62	
63	
64	
65	
66	
67	ParkSeis Version Number after multiplied by 10
68	
69	
70	Analog low-cut frequency (Hz)
71	Analog high-cut frequency (Hz)
72	
73	
74	
75	Applied digital low-cut frequency (Hz)
76	Applied digital high-cut frequency (Hz)
77	
78	
79	
80	
81	

Word#	Description
82	Minimum receiver-station number
83	Maximum receiver-station number
84	Minimum source-sequence number
85	Maximum source-sequence number
86	Receiver-station number for this trace
87	Source-station number for this trace
88	Last trace flag: 0 = not last trace; 1 = last trace of this gather
89*	Surface-consistent residual-receiver static (in number of samples) that has been applied to this trace
90*	Surface-consistent residual-source static (in number of samples) that has been applied to this trace
91	
92	Source-sequence number (SSN)
93	Processing-history file flag: 0 = no history; non-zero = number of characters in file name that follows
94	
95	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
96	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
97	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
98	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
99	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
100	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
101	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
102	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
103	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
104	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
105	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
106	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
107	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
108	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
109	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
110	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
111	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
112	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
113	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
114	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
115	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
116	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
117	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
118	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
119	Reserved for processing-history file name; packed ASCII, two ASCII characters per word
120	Reserved for processing-history file name; packed ASCII, two ASCII characters per word

⁺Modified from KGS header ("Modified SEG-Y")

*Convention for static corrections: POSITIVE value implies static shift (DOWN) away from zero-time, NEGATIVE value implies static shift (UP) toward zero-time.

**Elevation can be either absolute (i.e., positively above sea level) or relative (with reference to fixed altitude). In both cases, the orientation is such that higher elevation is positive. Therefore, increasing depth is indicated by the smaller value for elevation.