



PINELANDS 2012 SEISMIC SURVEY

FIELD OPERATIONS REPORT

ATPs 574 & 632

PL 171

and DAA 11

SURAT BASIN, QUEENSLAND, AUSTRALIA



19OCT-12DEC 2012

Executive Summary

Outline

QGC contracted GeoKinetics to perform a high-resolution 2D seismic survey in the Pinelands area of Queensland, north of the town of Miles. The lines in this area were recorded in between acquiring data in the nearby prospects of Bellevue and Jen-Argyle. The crew recorded the seismic lines over two periods: 19th Oct - 1st Nov and 8th – 12th Dec due to various logistical reasons. GeoKinetics provided Crew 488 for the seismic work in the Surat basin. The crew had completed the Barra 2012 seismic programme immediately prior to starting this job. The GeoKinetics crew included in-house Quality Control department with Promax field processing system.

The programme consisted of 147km in Pinelands, although not all the programme was eventually acquired as the project over-ran on time (and therefore budget). Pinelands area was mostly forested and grazing land, north of Miles and south of Wandoan.

Washdown requirements were, as usual for this area, strict. Some landholders required full weed certification and others merely a clean vehicle wash. This added to the time required to complete the work, although was not any more onerous than other areas of recent seismic surveys.

The crew initially began work on the Bellevue block in late September, but delays caused by issues relating to permit-to-work arrangements resulted in the crew acquiring the Pinelands data in two stages in between work on Bellevue.

The contract was awarded to GeoKinetics on a day-rate basis. The day rate included all survey costs, with a number of reimbursable items being billable in addition, such as the cost of Traffic Control, Third Party Washdown Inspector, fencing and Line Preparation costs.

Preparation

The crew mobilised to the work area from the previous block in Barra. As the main crew had all worked for the entire duration of the Barra job, they were sent home on leave for about ten days, whilst the advance party commenced to build a lead with line preparation and survey.



Picture 1: Camp under construction in Kurrajong Park, near Miles.

The camp was provided by KJM, as had been used on the previous area at Barra, but with the addition of a gymnasium for the crew members' use. This extra proved to be popular with the personnel through the job.

While the camp was being moved to site, the advance party members were accommodated in Miles at the Australia Hotel, and Chinchilla at the Zeller street accommodation camp. This was only for two nights. The main crew remobilised on 6th October and shift rotations began at this point, which meant that a considerable number of new personnel joined the crew in batches from that point on. GeoKinetics continued to use the Green Hands programme to identify personnel new to the crew. Instead of a marked tabard, however these personnel were identified by an orange hat or armband.

Seismic Data Recording

The final amount of seismic data acquired was 111.95km. There was an issue with one major landholder in the area, DLR Pastoral due to a change of ownership. This resulted in postponing recording lines in that area until it was known whether or not access could be agreed. The lines in DAA11 had to be recorded before the end of October, when the agreement expired.

Altogether 35km of line was dropped from the programme due to lack of access or the project over-running on time. There was a total of 9521 VPs and 430 skips, recorded in a period of 19 days. Initially the lines were laid out with 10m station intervals, but this was subsequently changed to 15m intervals in order to speed up the rate of progress when it became apparent that the crew could not achieve the target production figure of 7km per day. Overall the crew managed an average production figure of 5.9km per day over the period. Whilst this figure falls short of the expected productivity, the long drive time to the prospect area coupled with the need to record lines in two batches was largely the reason why.

The Pinelands lines were not subject to any permit to work requirements, and so acquisition in this area was relatively straightforward.

The parameters were changed during the project. Originally the station interval was 10m, but this was later increased to 15m intervals in order to speed up the rate of recording on a kilometre basis. Channel count for Pinelands was 700 channels, but this was reduced to 468 channels when the station interval was increased to 15m, thus maintaining a spread length of 7km. Later the spread was reduced further to 402 live channels in order to assist the crew to increase productivity. The reduced spread was much easier to manage especially at line move times for roll-on and roll-off.

The lines were recorded using a vibrator as the source; the vibrators worked in two fleets of a single vibe in each fleet with the source fleets were separated by 1km. The vibrators used were AHV-IV with 60,000lb peak output, running at 80% drive. A single sweep was used for vibe points.

Receiver array was linear with 6 x SM-24 geophones per station.

The recording instrument was Sercel SN-428XL system with 408 FDUs in the 2-channel cables. Approximately 1500 channels of ground electronics were available on crew.



Picture 2: Vibrator working along minor road in Pinelands area

The weather was mostly good for the duration of the survey, with the equivalent of about 2 days of weather down time in the period. 21mm of rainfall was recorded in the period.



Picture 3: Crew 488's recorder among the trees and the refuelling trailer at the roadside.

The vibrators were in good condition and did not have any unexpected problems for the duration of the work. The control electronics were Sercel 432 with VHF radios. Dual fleet source driven operation was in use.

The production achieved by the crew was less than anticipated, but this was mainly due to the long drive time from the camp to the prospect area. It was around an hour in each direction on average. There were some good production days, with a record day of 10km on 19th October. The factor limiting productivity was often lay-out of spread, and the recording hours show 17.5% of the total time waiting on spread.

Line PIN12-005 had to be shot in two halves. It was necessary to obtain the eastern end in DAA11 before the permission expired to acquire data in the DAA, but the west end of the line was not available for the Tayron property at the time.

The crew also lost time by having to move into and out of the prospect area twice, to co-ordinate activities with data acquisition in Bellevue and Jen-Argyle when land access in Pinelands was available.

Pre-survey clearance

The lines on the Pinelands area had been scouted by a scouting team incorporating a surveyor and environmentalist prior to the crew mobilising. Scouting notes and seismic environmental clearance reports (SECRs) were available to the crew, giving guidance on issues specific to the lines. The

scouting team were present on crew for the start-up to assist the surveyors. Access rules were provided by the land access consultants, who were based at Chinchilla, and day-to-day advice and assistance on land access matters were provided by the SLLO on the crew.

Line Preparation, Land Access & Weed Washdown

Terrain in the Pinelands area was hilly with substantial areas of woodland. The lines mostly ran along existing tracks and roads through the wooded areas. The Leichardt Highway runs approximately N-S through the block.

Line preparation consisted mostly of slashing, with a small area of mulching required. The slasher unit and mulcher unit were interchangeable on the same skid-steer bobcat. Also a bucket was available for clearing deadwood etc.

The front mounting of the slasher and mulcher units made the clearance operations very controllable, and also made washdowns more straightforward as the cutting unit could be lifted up high for cleaning when on the pad.

The line preparation activities were accompanied by a team of fire-fighters, provided by CPA Group. In addition there was a further water trailer with fire pump towed behind the support vehicle for the slasher.

Weed washdown requirements were met by the provision of three washdown units, each with an operator. An inspector was provided by a subcontractor, WHIS, for certified washes. There were a significant number of washdowns required during the course of the work (181 over the course of the job) and consideration of future work in similar areas must factor in the time required to perform these washes. Two washdown sites that had been identified in advance for Pinelands area were abandoned, as they were too close to the main road, and considered not to be safe enough.

Survey

The crew provided a team of three surveyors, one of whom was responsible for overseeing the line preparation work. Line marking was done with paint markers, and the only wooden stakes used were to denote BOL/EOL and hazards on the line.

The surveyors worked efficiently, and their base station trailer with Hi-Lo mast was a great benefit in maximising the radio range for GPS corrections.

The surveyors always managed to keep a comfortable lead over the recording team, averaging 5.8km per day over a period of 19 days' work. Their best day saw production of 12.2km in one day. The paint spraying equipment was reliable, and the paint spots seemed to be reasonably durable.

A decision was made to change the station interval from 10m to 15m part way through the acquisition, but no re-marking of line was required. Some lines were prepared but not recorded after part of the programme was axed.

PPV Measurements

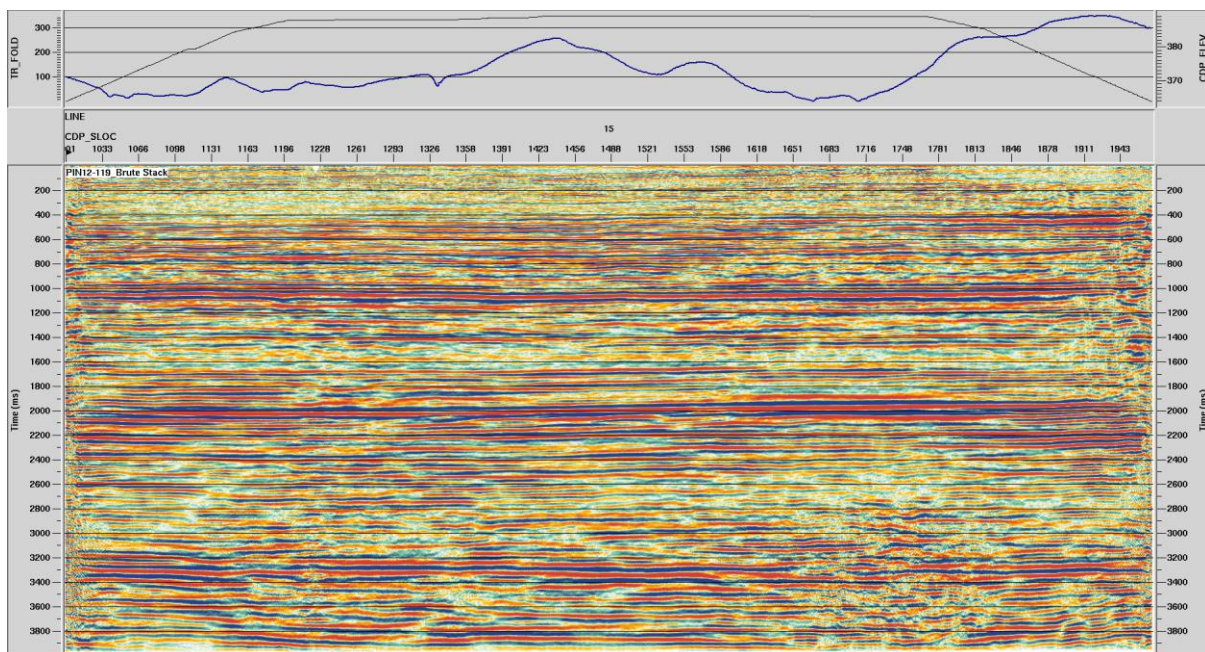
Where 'sensitive receptors', such as houses, barns, pipes etc were encountered along the lines, the crew took Peak Particle Velocity meter readings to ensure that levels of vibration induced by the vibrators were within international tolerances. These PPV readings were planned in advance based

on information from aerial photography, satellite imagery and notes from the surveying teams. The line trace maps produced by the crew included details of where PPV readings were to be taken, to simplify the process for the line crew. There were not many readings required in the Pinelands area, and most were in the proximity of power poles.

In-Field QC

For this survey, GeoKinetics provided a team of field QCs / processors. They worked closely with the surveyors and observers to create scripts for the recorder, and produce Brute Stacks of the data received. Final data shipments from the crew included portable hard disc drives with SEG-Y data, SPS files and ObsLogs for each line as well as a line report.

Brute stacks were produced quickly on completion of the lines and were of good quality.



Brute Stack 1: Line PIN12-119

Land Access Issues

As has often been found to be the case now on the seismic projects in this area, there were numerous properties on the block that had issues relation to access problems. The crew managed to work around most of these by recording the block in two parts. Some lines were changed by the seismic pre-planning section to run across land where access could be obtained more easily.

There were no problems experienced with the landholders in the area for the crew once on the ground.

Weather

The survey took place during the Queensland summer, and the weather was fairly typical for the time of year. The temperatures became very hot during December in particular, and the crew had to pay particular attention to keeping the personnel hydrated when working in those conditions.

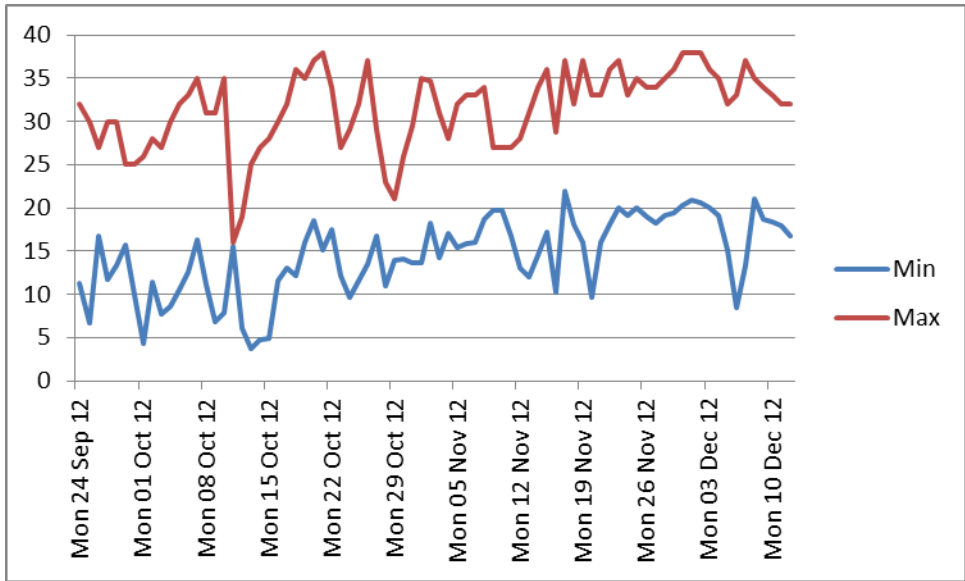


Figure 1: Min and Max Temperatures

There was 92mm of rainfall logged during the period of the project, and approximately 42 hours of weather standby time accrued. These figures include the time spent on the Bellevue and Jen-Argyle projects which were run from the same campsite and interspersed the Pinelands data acquisition. This is not unreasonable for the time of year.

Camp Logistics & Communications

The camp was provided by KJM and consisted of a number of skid-mounted cabins with raised walkways with shading over the walkways. The majority of the cabins were new or refurbished and were to a good standard. However, two of the cabins with single rooms were very old and should be considered due for replacement or refurbishment now. KJM did replace the beds in these rooms on request. An adequate number of ablutions blocks consisting of shower cubicles and toilets were provided with segregation for males and females. A kitchen / mess and extra diner were provided, although the kitchen area was small for the number of personnel present. There was a very small TV lounge which was not really adequate for the number of people on the camp. KJM ran the camp with six staff: three cooks running a day and night shift, plus three “campies”. A laundry service was provided for the crew by the KJM staff. A gymnasium was provided for the crew’s use, which proved popular.

The GeoKinetics management team used a suite of offices in two additional cabins, which also housed an excellent meeting room. This proved to be ideal for daily operations meetings as well as inductions etc for incoming personnel.

GeoKinetics management used a VSAT system for internet / email and IP telephone communications with a WiFi network for general use. Phone signals in the area were very good and telephones & aircards worked well without the need for external antennas. KJM also provided a VSAT system for QGC use at extra cost.

The Journey Manager’s office was equipped with a VHF radio with an antenna on a telescopic mast, which gave good FM communications for some considerable distance. In addition a mobile phone and IP phone was in use in the office as well as UHF radio. All GeoKinetics vehicles were equipped

with VHF radios, and the crew tech fitted many with UHF radios as well during the course of the project. Certain key personnel had company mobile phones e.g. Crew Manager, Line Boss. The recorder and ambulance also had both radios and mobile phone & satellite phone. Thus overall the communications were very good for the project. However, radio communications from camp to the lines in Pinelands area was not possible due to the large distances involved. All subcontractors had UHF radios and GK installed some VHF radios into subcontractor vehicles in order to allow communications between all departments.

The vibrator control and data channel was on a traditional VHF radio system so vibrate PSS tones etc were audible in the recorder.

VHF radio channels were allocated as follows:

- 1 Basecamp Communications
- 2 Line Operations
- 3 Survey Operations
- 4 Vibrator Voice communications
- 5 Vibrator Data communications (only available to vibrate & recorder)

Channel 27 was used on the UHF radios.

A dedicated journey management supervisor ensured there was adequate control over vehicle movements and a good vehicle management system was in place. In Vehicle Monitoring System (IVMS) vehicle monitors were used extensively and checked every day. A weekly report was produced both to indicate driver infractions and also as a basis to reward the best drivers. This was in the form of a Red/Amber/Green (RAG) report which named drivers, thus providing a valuable feedback tool illustrating driving performance.

The crew held a weekly barbeque on a Saturday evenings, which was a good time for all personnel to mingle and chat informally, although the outside area lacked sufficient tables and chairs. A tent was erected with a ping-pong table for crew members to use. GeoKinetics management enforced a dry crew policy for the most part, with the exception of the Saturday night gatherings. The value of the dry crew policy is questionable as it tends to result in reduced communication between crew members on a day-to-day basis. Other crews that have worked for QGC have generally allowed drinks up to mid-strength, which generally seems to have a beneficial effect of increasing the team spirit and morale of the crew.

Personnel

Crew 488 personnel collectively had many years' experience of seismic work, both within Australia and internationally. Heads of departments were experienced in their roles and generally provided good leadership. Morale of the crew members was good, and the crew worked well as a team. Flow of information in both directions from management to line crews etc was effective. The crew rolled into this work programme directly from the previous QGC project in Barra, and so were familiar with the requirements of the job.

GeoKinetics utilised various subcontractors to staff the crew, and few problems were encountered with these subcontractors. Generally GK managed their subcontractors well, and the personnel from the subcontractor companies worked well as part of a single team.

Average crew headcount was around 75 for the recording phase of the project; this included GeoKinetics direct personnel, Mascott line clearance, WFI traffic management, WHIS weed hygiene, KJM camp staff, HSE+ (paramedic) as well as QGC representatives.

Daily operations meetings on crew were well run and essential for planning of operations. HoD's attended these meetings and disseminated relevant information to their departments. The meetings were attended by QGC reps on crew. A weekly HoD safety meeting was held at 5pm on Saturdays with the crew stopping normal work activities an hour earlier than usual to run these meetings. Line crew were tasked with detailed cleaning of the vehicles at these times.

Morning toolbox meetings were also well run and one member of the crew was nominated each morning to talk briefly on a topic of their choice, as the day's "Safety Steve". This was a good way to encourage involvement in the morning meetings and speakers were strongly backed-up and encouraged by the party manager.

The crew operated at "green-hands" scheme where all personnel newly recruited were identified by an orange hat or armband. Green-hands were mentored by more experienced personnel, and not left working unsupervised.

GeoKinetics provided new high-vis shirts with stitched-in reflective tape to their personnel so that it was not necessary for them to wear a tabard over the top on road work. This was beneficial due to the high temperatures as it saved the crew members from having to wear multiple layers of clothing.

Reporting Procedures

GeoKinetics crew manager produced a daily report for QGC which included production figures, HSSE statistics, progress map and details of reimbursable costs accrued for the day. This report was very detailed and formed the basis of the figures against which invoices were checked. The crew QC department were responsible for compiling the data for the daily report in the evening, ready for distribution next morning. Although the report format was not of the most attractive layout, stretching to 10 pages at times, the information was clear and all the required information was captured. On numerous occasions the report required some revisions before it was agreed. A preliminary report should be considered if it proves problematic to compile the required figures in time for onward transmission to interested parties in Brisbane and beyond.

A weekly dashboard-style report summarising the week's activities was compiled by the QGC representatives, and this also included geophone rotation statistics from the crew tech.

Reports were submitted via email which was connected through aircards.

GeoKinetics did not supply client vehicles, so these were sourced externally on a long-term rental basis. Phone cradles did not get fitted to the vehicles; this should be considered for future jobs to increase communications cover, however, the phones used by the personnel on the project would need to be of the same type to facilitate this.

Vehicles

Crew 488's fleet was fairly recent and had just been fitted with IVMS prior to the start of the work. The fleet had been well maintained in the meantime and was effectively "as new". All vehicles were also fitted with dual airbags, ROPS, and appropriate communications equipment. A full-time journey manager monitored the fleet and produced appropriate vehicle & driver reports on a weekly and monthly basis. At the start of the project, the GK light vehicles all had split rim wheels fitted, but these were all swapped out for solid rims during the course of the project work.

GeoKinetics had a team of mechanics assigned to the crew, headed up by the vibrator technician. They had a container workshop on site, and a tent for additional work space and storage.

Vibrators and Recording

The recording system used was the Sercel SN428XL with 408 cables containing 2 FDUs each. Geophones were SM-24. No unexpected problems were experienced with the ground electronics. A net-link was available to the crew and was used for a crossing of the main highway in one point.

An analysis of the recording time log shows that approximately 39% of the total time available was spent in production, with 11% of time used for travel. There was a significant amount of time (17.5%) waiting on layout of spread.

The crew continued to hand-roll the cables as they picked them up, as they had done on the previous job. It is likely that efficiency savings could be made by pulling the cables directly into the cable truck instead, but the crew were somewhat reluctant to use this method. One of the two line trucks was damaged in a collision with a tree, and was away for repairs for some considerable time. This made it impractical to try picking up the cable loose into the truck as rental utes had to be used for spread movement instead, and these were not equipped with the required cages etc.

The cycle time for recording was such that the speed of acquisition exceeded the layout speed, and the recorder regularly caught the layout crew and had to wait for more spread.

In order to maximise the efficiency of the recording operation, it would be desirable to speed up the laying out (and picking up) of spread. An extra front crew team could have increased overall productivity.

Conclusions

GeoKinetics Seismic provided a competent crew that conducted the seismic survey in a professional and efficient manner. Relations with local landholders were good. Overall, the crew carried out their activities whilst paying due respect for the environment and the local residents.

The crew benefitted from strong technical support, which ensured a trouble-free start to the work and smooth running of the recording system.

Members of the crew worked with enthusiasm and participated well in HSSE matters, e.g. through use of STOP cards etc. The crew was well-managed and HoDs showed strong leadership. The "green-hands" scheme for new employees worked well.

The vibrator fleet was in good condition and well maintained. No significant problems were encountered and ample spares were available to the crew so there was no appreciable vibration down time. Reversing cameras were fitted to the vibrators during the course of the project, which improved visibility greatly.

The crew's daily report is very detailed but presentation could be improved; it frequently stretches to 10 pages for a single day. There were frequently revisions made to line prep and survey ranges reported for previous days. Figures for subcontractor reimbursable items were generally reliable, and this made checking of invoices fairly straightforward.

The seismic data recorded was of good quality. The required testing standards were maintained and production was steady and generally good. A record production day of 10km demonstrated the crew's ability to acquire a high volume of quality data. The crew's insistence on hand-rolling cables is questionable in terms of efficiency, and there was reluctance to try the traditional method of pulling cables loose into the back of the cable trucks.

In-field QC was of high quality, and the team was efficient in creating brute stacks and support data for shipment to the processing centre.

Crew management was strong and good leadership was demonstrated by both the Project Managers (party managers), as well as line management from the HoDs.

Overall the crew performed very well and is recommended for future work for QGC.

Recommendations

Vibrators

The vibrators were well set up with built-in FDUs in a panel for hardwire sims. The addition of reversing cameras improved visibility greatly.

The Detroit diesel engines are extremely noisy and intrusive in inhabited areas. Some form of noise reduction or quiet packs should be considered to reduce the sound levels.

Recording

The geophone strings are all wired single-ended. This means that they need to be picked up in a particular direction so that they are the correct way around for laying out again at the front of the line. The crew were loathe to adopt the suggested use of a pick-up hasp from which the strings could be transferred to the original hasp. Consequently either the back crew had to walk much greater distances than strictly necessary, or the front crew had to deal with a mixture of geophone strings backwards and forwards on hasps. This led to confusion and skip-gaps in the spread at times as the FDU would not always be on the appropriate side of the station for easy connection with the geophone. It is recommended that the geophone strings be altered to double-ended configuration to simplify pick up and layout.

PPV meters with built-in GPS would be desirable and simplify the recording of PPV measurements. Also the particular meters in use on the crew do not give a real-time reading during recording. Real-time readings are required if live monitoring along pipelines etc is required.

Crew had only two line trucks for spread movement. One was damaged and away for repairs for some considerable time, leaving the crew short of resources to move equipment. Consideration should be given to adding a further vehicle, or perhaps extra light vehicles instead of the medium-heavy trucks provided. Cages should be fitted as appropriate to allow the cable to be picked up directly into the trucks with out hand rolling. This would have the added benefit of reducing the number of bad connections on the line, as fewer cableheads would need to be opened and reconnected.

The recorder is a former coach, and has a separate trailer for the generator and antenna mast. This limits its ability to access difficult areas and increases the effort for washdowns when required. An alternative vehicle should be considered with integral generator and hi-lo mast.

More personnel for front crew layout should be considered to increase the speed of layout, and thus make the most of the fast recording capability of the dual fleet, source driven operation.

Camp

The camp was improved from the previous area by the addition of a gym. The campsite was spacious and had ample parking. Many of the crew members were accommodated in twin rooms, and consideration should be given to whether accommodation should be upgraded to all single rooms. This would afford personnel greater privacy and perhaps reduce fatigue as some personnel find it difficult to sleep if sharing a room with a snorer.

The dry camp policy enforced by GK except on barbecue nights, and the lack of social areas meant that there was little dialogue among crew members in the evenings. This was unfortunate, as this would normally result in better team spirit and easier resolution of day to day matters affecting the team members.

The cost of the camp is very high. On future work areas, if commercial camps are available, these should be considered instead of using KJM again. However, the benefit of having the crew all accommodated in one place should not be underestimated. It is difficult to manage a crew when they are living on different sites.

Survey & Line clearance

Line clearance was efficient, and the slasher unit was very effective. The operator was very experienced and no mechanical issues were encountered.

The front-mounting of the slasher on a skid-steer is an improvement over the tractor towing a traditional slasher, as it makes the unit more manoeuvrable and easier to deal with undulations in the ground without scalping.

The mulching head was used for only a few small sections of line and was very effective, even in thick bush.

Surveying was efficient and the use of the paint sprayer system made production very quick. The surveyors' trailer-mounted base station with hi-lo mast antenna was of great benefit to the range in which they could receive RTK corrections. An electric motor was added to the mast which made it much quicker and easier for the surveyors to put up and down.

The lack of numbers on the line can make it problematic for the line crews at times if they do not have access to the appropriate GPS equipment. It is suggested that survey should mark line numbers occasionally, such as at road crossings or other notable points to assist the line crews. A number written on a stone would be sufficient.

Gates & fencing

The new gates used on this project have proven to be a good design which allows for quick and easy installation. In many cases, the landholders have been happy to leave the gates in situ after the seismic work has completed. This represents a cost saving to the crew, as the value of any gates reinstated back to fencing would be outweighed by the cost of the fencing team day rate to do the work.

Reports

Daily reports were generally good although the presentation could be improved. The crew produced a start-up report within a few days of the mobilisation, and final report soon after completion, to a high standard.

Appendices

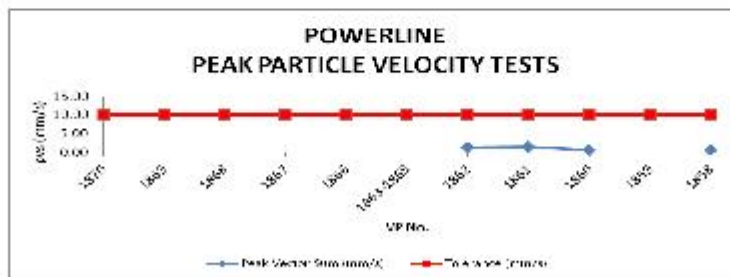
Sample PPV Analysis

Crew **GEOKINETICS CREW 488**
Client **QGC**
Project **BELLEVUE – PINELANDS 2012 - 2D**
PPV Device **InstatelMiniMate Plus**
Structure **POWERLINE**
Time & Date **07:41 – 08:14 / 20 October 2012**
Seismic Source **Vibroseis (AHV IV)**

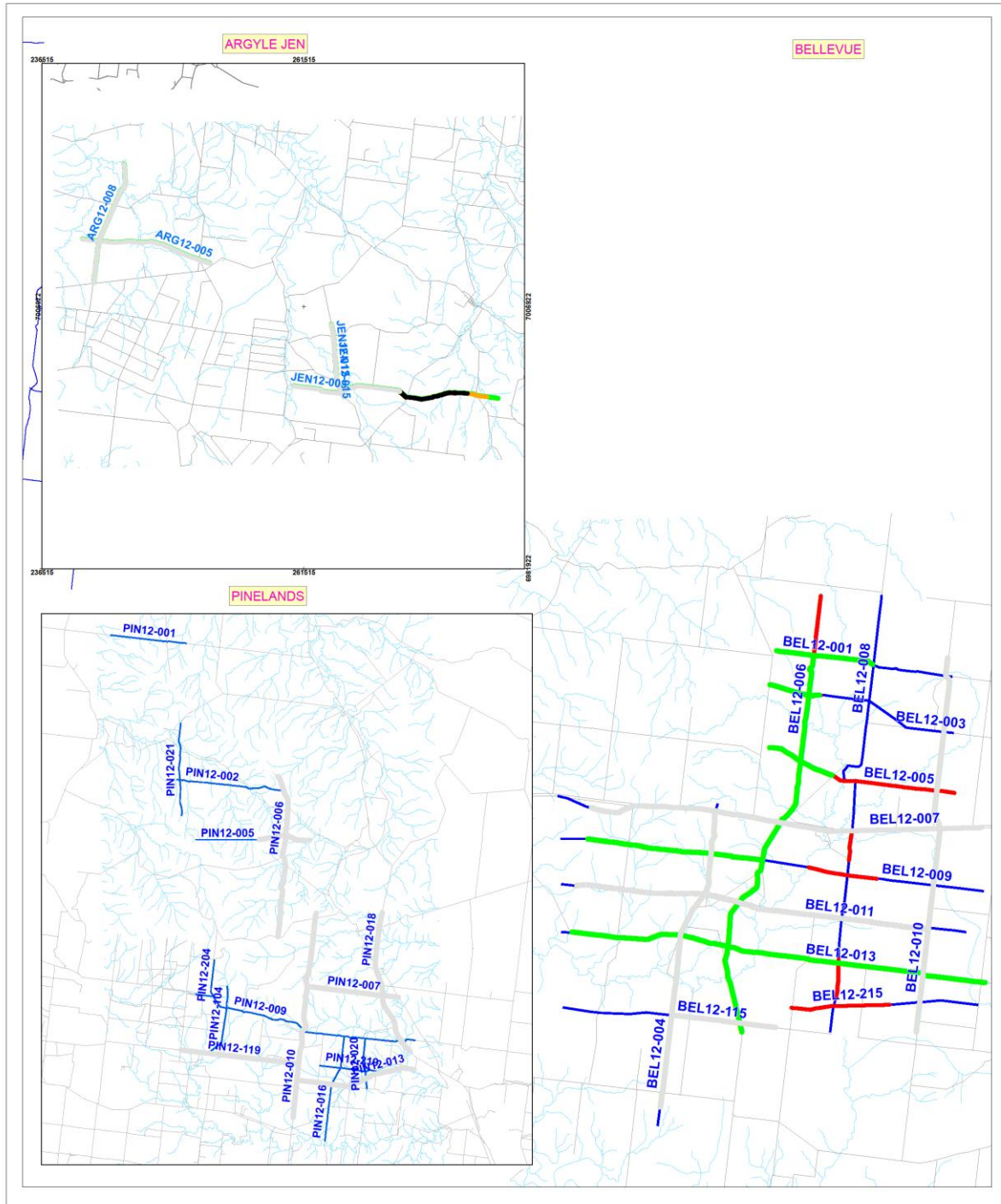


Coordinates: S 26° 30.818' E 149° 59.383'

LINE	VP	PVS (mm/s)	DISTANCE (m)	COMMENTS	VP Time
PIN12-119	1870		87	No Trigger	9:11:14
PIN12-119	1869		78	No Trigger	9:49:26
PIN12-119	1868		67	No Trigger	9:12:40
PIN12-119	1867		57	No Trigger	9:50:10
PIN12-119	1866		48	No Trigger	9:13:20
PIN12-119	1863-1865			Skip Powerline	
PIN12-119	1862	1.37	13		9:14:07
PIN12-119	1861	1.58	13		9:51:50
PIN12-119	1860	0.66	19		9:15:47
PIN12-119	1859		27	No Trigger	9:52:50
PIN12-119	1858	0.54	36		9:17:05



Progress Map (example from mid-way through the project)



Geometrics **QCC**

Progress Map

Bellevue/Pinelands/Argyle Jen
2D Seismic Survey

Surat Basin, Queensland

17th November 2012

Legend

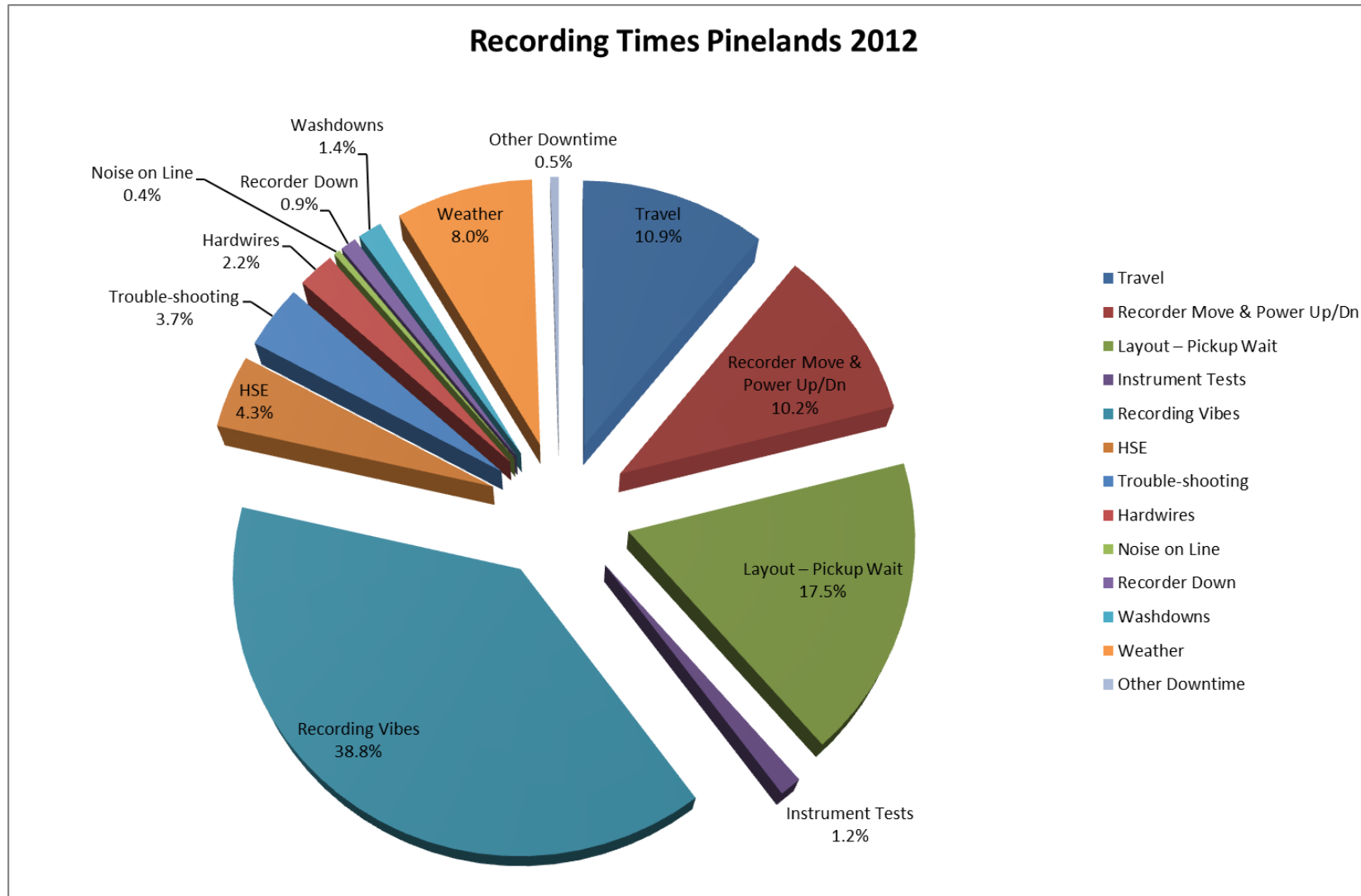
- Picked Up
- Recorded
- Layout Completed
- Surveyed
- Line Clearing
- Seismic Line
- Road
- Stream



GEODETTIC PARAMETER
TRANSVERSE MERCATOR GRID

Grid Projection: MGA 56 South
 Central Meridian: 153° 00' 00" E
 Latitude of Origin: 00° 00' 00" N
 False Easting: 500,000 m
 False Northing: 10,000,000 m
 Scale Factor on CM: 0.9996
 Spheroid: GRS80
 Datum: GDA94
 Semi-Major Axis (a): 6378137.00 m
 Eccentricity Squared (e²): 0.00694380035512838
 Inverse Flattening (f): 298.257222101
 Vertical Datum: AHDa

Recording Time Breakdown Chart



Final Line Recording Statistics

	Start date	Finish date	First Receiver	Last Receiver	Total Receivers	Total Length	First VP	Last VP	Number of Skips	Total VPs	Total VPs Plus Skips	Interval	km	Comments	Slashing range	Mulching range	No prep rqd range
P002	10/12/2012	10/12/2012	1001	1598	598	8.9700	1000	1598	66	533	599	15	8.985		1001-1598	N/A	N/A
P005W	11/12/2012	12/12/2012	1001	1730	730	10.9500	1000	1730	63	668	731	15	10.965	Overlap 215 stns to road	1001-1512		
P005E	27/10/2012	28/10/2012	1516	1947	432	4.3200	1516	1947	0	432	432	10	4.320	Open spread W end only available	1513-1739, 1742-1947	N/A	1740-1741
P006	29/10/2012	1/11/2012	1001	2363	1363	13.6300	1000	2363	49	1315	1364	10	13.640		1085-2343	N/A	1001-1084, 2344-2363
P007	26/10/2012	27/10/2012	1000	1753	754	7.5400	999	1753	12	743	755	10	7.550		1700-1752	1621-1699	1000-1620, 1753-1753
P009	8/12/2012	9/12/2012	1001	1648	648	9.7200	1000	1648	27	622	649	15	9.735		N/A	N/A	1001-1648
P010	23/10/2012	25/10/2012	1001	2722	1722	17.2200	1000	27223	33	1690	1723	10	17.230		1001-2722	N/A	N/A
P013	19/10/2012	19/10/2012	1001	1999	999	9.9900	1000	1999	12	988	1000	10	10.000		1001-1337, 1846-1999	N/A	1338-1845
P016					0	0.0000					0	15	0.000	Dropped			
P018	21/10/2012	23/10/2012	1001	2216	1216	12.1600	1000	2216	131	1086	1217	10	12.170		1001-2216	N/A	N/A
P119	20/10/2012	21/10/2012	1001	1971	971	9.7100	1000	1971	23	949	972	10	9.720		1001-1971	N/A	N/A
P219					0	0.0000					0	15	0.000	Dropped			
P020					0	0.0000					0	15	0.000	Dropped			
P021	12/12/2012	12/12/2012	1001	1508	508	7.6200	1000	1508	14	495	509	15	7.635				
Total					9941	111.830			430	9521	9951		111.950				