63	2/1/98	5.00 PM	The TB was ordered from Blackwater by the Chief Mining Engineer	The TB took 24 hours to arrive and 12 hours to commission.
64	2/1/98	6.00 PM	Sealing of 9 c/t via borehole was completed	
65	2/1/98	8.00 PM	The water pump was turned on to pump into 5 cit borehole	The pump operated for I l hours at 28 1/s, 1.1 Ml. Minor breakdowns occurred. The monitoring results showed CO and H, reduced at 5 c/t. 3. Monitoring at 5 c/t was lost due to water in the tube and the integrity of the seals was threatened. 4.

66	2/1/98	9.00 PM	The Manager develop•ed notification trigger levels in conjunction with the Consultant	J. 4.	The ICM was advised of the action. These triggers were exceeded to around 1 1.00 PM and the Consultant 'returned to the mine. Hourly samples were initiated and the results returned rapidly to near fresh air status at 5 cit. LW4 TG was monitored hourly in order to detect POC leaking if a seal had been breached. The resuKt ivas that a tube bundle blockage was diagnosed.
67	3/1/98	AM	Bag samples were taken rro•n 4, 5 and 7 cit, water coming out		The water which was introduced at 5 c/t had built up behind 5 cit seal and was ensuing from the sample pipe when opened. Water was leaking abundantly around the periphery of 6 c/t seal.
67A		8.15-9.15 AM	The second batch of CO, was started	3 . 4.	Having noted a reduction in 02 content accompanied by a reduction H2 and CO at 5 c/t when the initial batch of CO was introduced, decanting of the second batch was implemented. This was intended to cool the heating, deplete oxygen and allow access to the mine and re-establish the 5 c/t monitoring point. 3,0001 of CO, were introduced producing 1,500 m^3 of gas. This resulted in a reduction in 02 concentration at 5 c/t seal to 9% from 15-18% and an increase in C02 to 57%.
68	3/1/98	1 1.15 AM	The Manager returned underground to check the water pressure behind 6 c/t (2 psi)	2.	The MM and Undermanager measured water pressure at 6 c/t through sample pipe. The pressure was 2 psi, indicating at that stage that the water pressure was approximately 1.5m. The 5 c/t sample tube was now clear, having been water filled earlier.
68A	3/1/98	1 1.15 AM	Bag samples were taken to Moranbah North for comparison readings		The GC at Moranbah North was used to check the results obtained at North Goonyella since critical decisions were being made, based essentially on GC data.

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69	3/1/98	10.00 AM - 2.30 PM	There was a phone conference with the Incident Management Team, CMI and SIMTARS	-	A discussion was held to update the CMI and SIMTARS chemists on the situation. The CMI again advised consideration of ventilation changes to the system. The Incident Team did not elect to e*ercise this option.

70			The TB arrived at 1 1.00 AM		Problems were encountered in gaining access to the TB at Cook Colliery and also with parts being left behind at Cook.
				2.	Cranage ivas a problem in that cranes and drivers had to be organised once the TB arrived on site, rather than being organised prior to that event.
				J.	The authorisation of crane drivers was an issue in that some of the North Goonyella staff are authorised as crane drivers but this resource was not used.
70A			The Manager, Undermanager, Surveyor, and Consultant went underground to reestablish a tube bundle sampling point at 5 c/t		After the introduction of water at 5 c/t, the tube bundle line had become blocked by water.
				2.	Having introduced 1,500 m of C02 at 5 c/t there was evidenced that the area was blanketed by C02 and was therefore depleted of oxygen.
				3.	The decision was taken with the agreement of the ICM and DCI to send a team to repair the tube bundle system in order to re-establish monitoring at the key point.
71			The TB was commissioned		The TB was commissioned at midnight, ran for I .5 hours and then stopped.
					The TB re-started in earliest at 5.00 AM. The TB was connected to the 5 c/t borehole which was 4" diameter rather than the normal 6".
				2.	The second inerting hole at 4 c/t was completed and the decision made to continue at 5 c/t rather than move the TB as the monitoring results •were favorable.
				J.	Pipes were laid out such that the TB could be connected to the 4 c/t borehole without moving the TB, or both holes could be placed on line in parallel.
				4.	The 02 concentration at 5 c/t reduced to approximately 4.5% within 7 hours. Over the next 36 hours it reduced to 0.5% but stabilised at approximately 2.5% following adjustment of the TB fuel system.
				5.	

72	3/1/98	6.00 AM - 12.00 PM	The surface borehole at LW3 MG was aborted duc to difficulties, started drilling at 4 cit	A surface borehole was being drilled at LW3 2.5 c/t for the purpose of sealing behind LW3 1-4 chocks and reducing leakage to the area of the heating. 2. This hole was also a back up inerting hole. J. At this stage, the need to seal at LW3 MG was reduced as the inerting at 5 c/t borehole was taking effect, evidenced by the EMS data (ref. graphs). Difficult drilling and reduced requirement led to the decision to abandon and drill a back up inerting hole at 4 c/t. 4. The 4 c/t hole was part of the strategy and this decision represented deletion of an element no longer required. 5. The difficulty in drilling into goaf at this point accelerated the decision.
72A	3/1/98	6.00 AM - 12.00 PM	There was observed a dramatic reduction in 02, 1-12 CO readings at 5 c/t seal	Following introduction of C02 at 5 c/t borehole the readings of 02, 1-12 and CO at 5 c/t sampling point showed large scale reductions, indicated by the EMS graphs. 2 Similar reductions were not seen at 7 c/t until later.
73	4/1/98	8.00 AM	There was an Incident Management meeting - action plan	Remedial work to get back underground i.e. grouting ofLW3 MG area. Repair tube bundles at 4 and 7 c/t. Stone dusting LW3 and LW4 TG. Based on zero 1-12 reading.
74	4/1/98	8.30 AM	The decision was taken to conduct one hourly sampling at 5 c/t	This was decided in order to establish trends resulting from inertisation.

Goonyella

75	4/1/98	I l.20 AM - 1.40 PM	The Manager, 2 Undermanagers, Mines Rescue Officer and Miners Officer went underground	3. Bag samples •were taken from 3, 4, 5 and 7 c/t. 4. The 5 and 6 c/t seals were repaired. The pressure drop across seals was measured The pressure drops were as follows: 3 c/t = 135 Pa 4 c/t = 135 Pa 5 c/t = 160 Pa 7 c/t = 80 Pa.
	4/1/98	5.30 PM	BHP Moura were contacted regarding a spare TB	BHP was placed on standby in case of a problem with the TB.

77	4/1/98	5.30-8.30 PM	Level was declared by the Manager	Based on interpretation of monitoring data, the decision was made to commence the return to normal operations.

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78	4/1/98	5.30 PM	The Manager established triggers for notification to the Manager and Ventilation Engineer	2.	The trigger levels were established according to the SCHMP, 100 ppm Hi, > 200 ppm CO; >7%02. If triggers were reached, then hourly sampling WOUtd be implemented. If two consecutive samples of greater than 200 ppm H2, 400 ppm CO and 9% O, were recorded, then the mine would be evacuated.
79	4/1/98	8.57 PM	The TB stopped at 8.57 - 9.15 and again at 9.42 - 10.56 PM		The stoppage was caused by a dirty fuel filter. 02 at 5 c/t seal increased from 3.5% to 5.5% by 10.00 PM. Issues were raised relating to: Maintenance Spare parts Technical back-up Analysis of gas produced by the TB.
80	5/1/98	12.00 AM	Thc ICM and the Consultant checked the niethod of GC use	3.	'I-he SIMTARS operator was having difficulty. A second trained operator was recalled to duty. Training of operators of GC was again raised as an issue.

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Descriptors

	5/1/98	8.00 AM - 12.30 PM	The DCI, Senior Mines Inspector (SMK), the ICM and the Manager conducted an inspection of the mine	2.	This preceded the normal pre-shift inspection by Deputies. Meetings were held between the mine management, Incident Team and Inspectorate following the inspection.
82	5/1/98	8.30-1 1 .30 PM	The Deputies pre-shift inspections were conducted		The inspections were suspended due to trigger levels being reached and the mine was evacuated.
83	5/1/98	1 1.30 PM	The Deputies were withdrawn from the mine		A linear increase in CO and H, at 5 c/t was observed and considered to be inexplicable. CO and 1-12 reached 700 ppm and 400 ppm respectively.

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84	6/1/98	3.00 AM	The TB was suspected to be the cause of reaching trigger levels		The Consultant asked for a bag sample of the TB exhaust due to the unusual linear trend in CO and H2 at 5 c/t.
					Bag samples were taken from the exhaust of the TB. The result showed 1,300 H, and 2,200 CO.
				2.	Routine hourly analysis of the TB exhaust was instigated.
					Subsequently, the TB was proven to be very sensitive to fuel pressure, incomplete combüstion occurring at high pressure, causing the appearance of CO and 1-12 in the exhaust.
				4.	The TB had been operating at 0.5% 02, 20 ppm CO. At 10 AM, the TB was observed to produce 0.5% 02 and 150 ppm CO. At that output, 1-12 was also present. A compromise was agreed where the TB output was 1.2% 02, 20 ppm CO and zero FL.
				5.	The TB operators were instructed to monitor the output and report to the Incident Team if 02 or CO moved from the agreed value ±5%.
				6.	
85	6/1/98	4.15 AM	The TB was shut down on overtemperature		Moths blocking the condenser were believed to be cause.
					Once the TB stopped the 1-12 and CO concentrations at 5 c/t began to decline.
86	6/1/98	8.00 AM	The Deputies pre-shift inspection was conducted		The men went underground at 10.30 AM.
					A normal shift was worked.
				3.	Three hourly bag samples from 4, 5 and 7 c/t were resumed from one hourly, due to falling below the set trigger levels.

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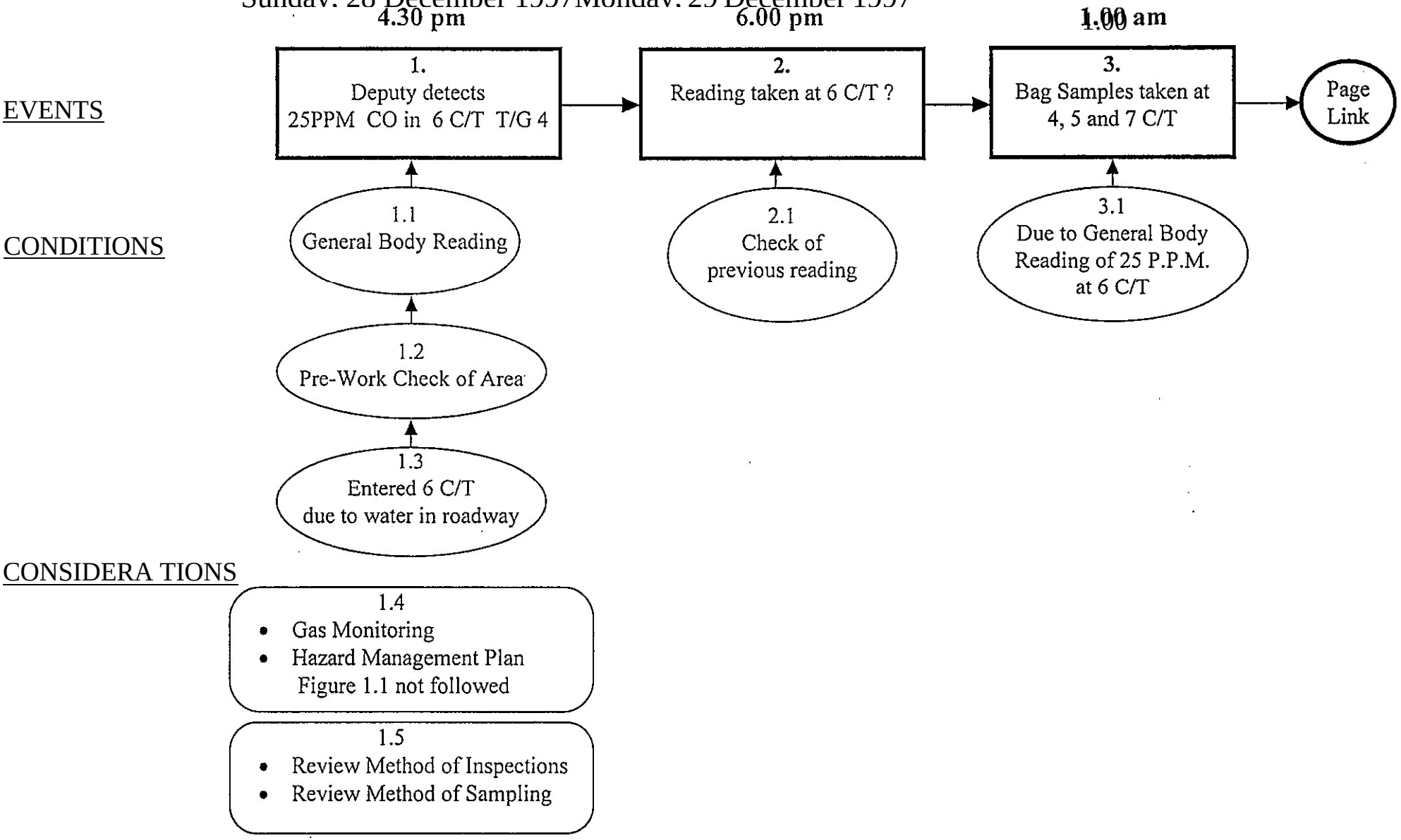
GLOSSARY

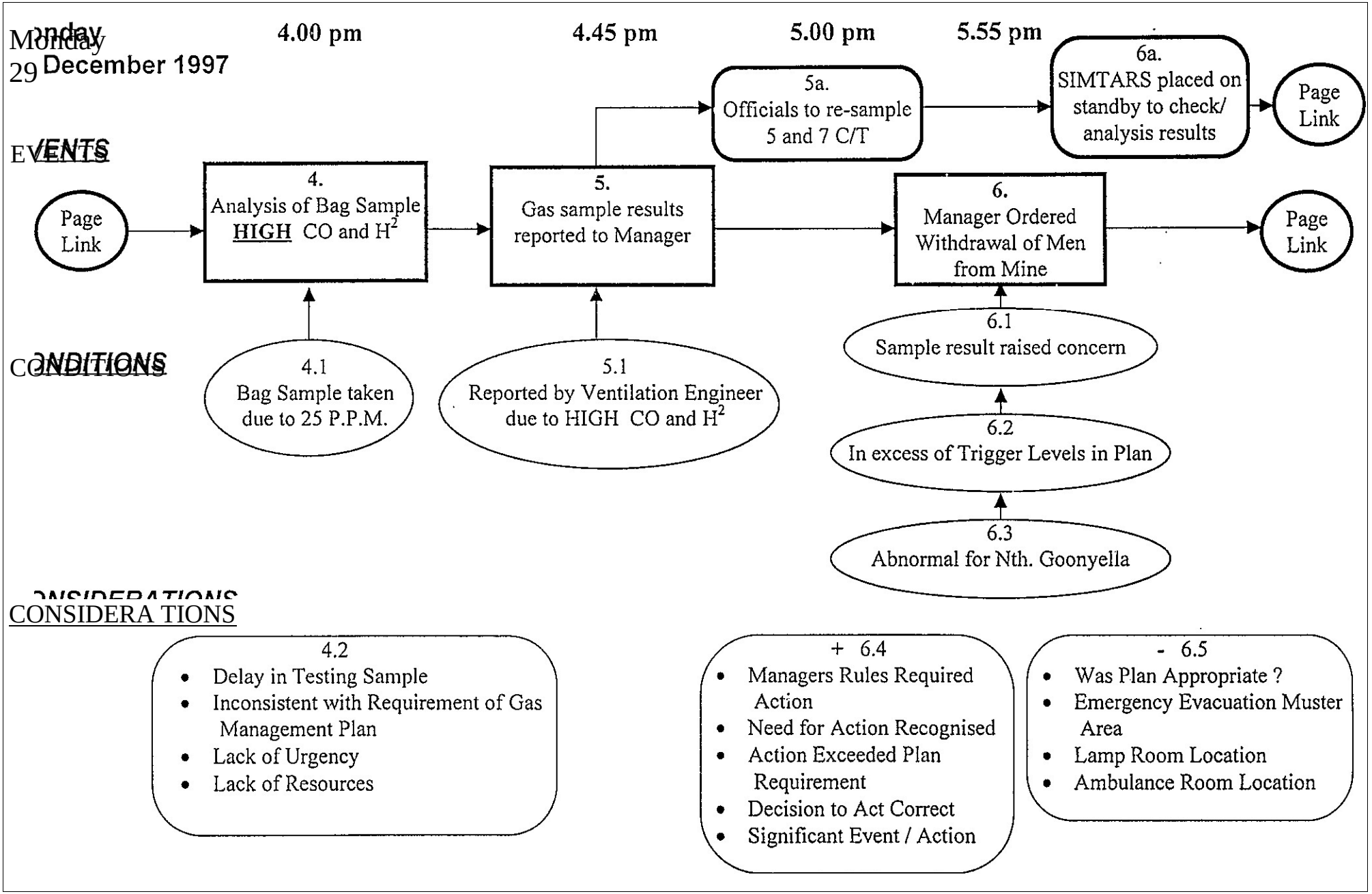
ACMI	Acting Chief Mines Inspector
adsorbed	The process of gas entrapment in the pore matrix of coal
CFMEU	Construction, Forestry, Mining & Energy Union
CH4	Methane
CMI	Chief Mines Inspector
CO	Carbon Monoxide
COZ	Carbon Dioxide
c/t	Cut through
DAK	Loudhailer communications system
DCI	District Check Inspector
desorbed	The process of gas release from the pore matrix of coal
	Inspector of Coal Mines
DMM	Deputy Mine Manager
EMS	Environmental Monitoring System
GC	Gas Chromatograph
GM	General Manager
GMHMP	Gas Monitoring Hazard Management Plan
1-12	Hydrogen
Vs •	litres per second
LW	Longwall
m	metres
MG	main gate
Ml	Megalitres millimetres
MM	Mine Manager
O,	Oxygen
Passport	Hand Held Monitoring Device
PED	Personal Ernergency Device
PJB	personnel transport
POC	products of combustion
ppm	parts per million
QMRS	Queensland Mines Rescue Service
SCHMP	Spontaneous Combustion Hazard Management Plan
SIMTARS	Safety in Mines Testing and Research Station
SMI	Senior Mines Inspector
SMRS	Southern Mine Rescue Service

NORTH GOONYELLA - GOAF SPONTANEOUS HEATING, December 1997

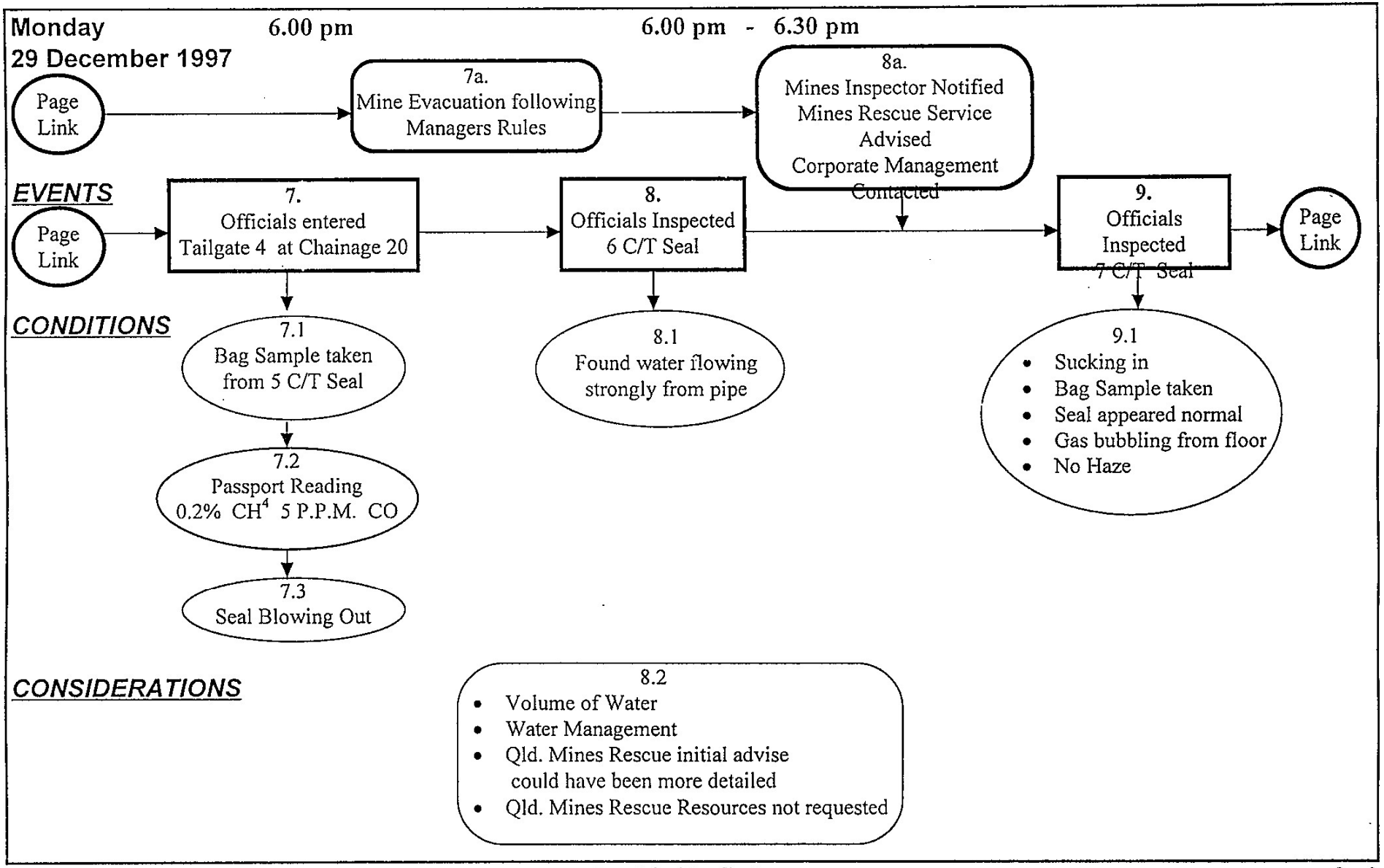
Sundav. 28 December 1997Mondav. 29 December 1997



NORTH GOONYELLA - GOAF SPONTANEOUS HEATING, December 1997



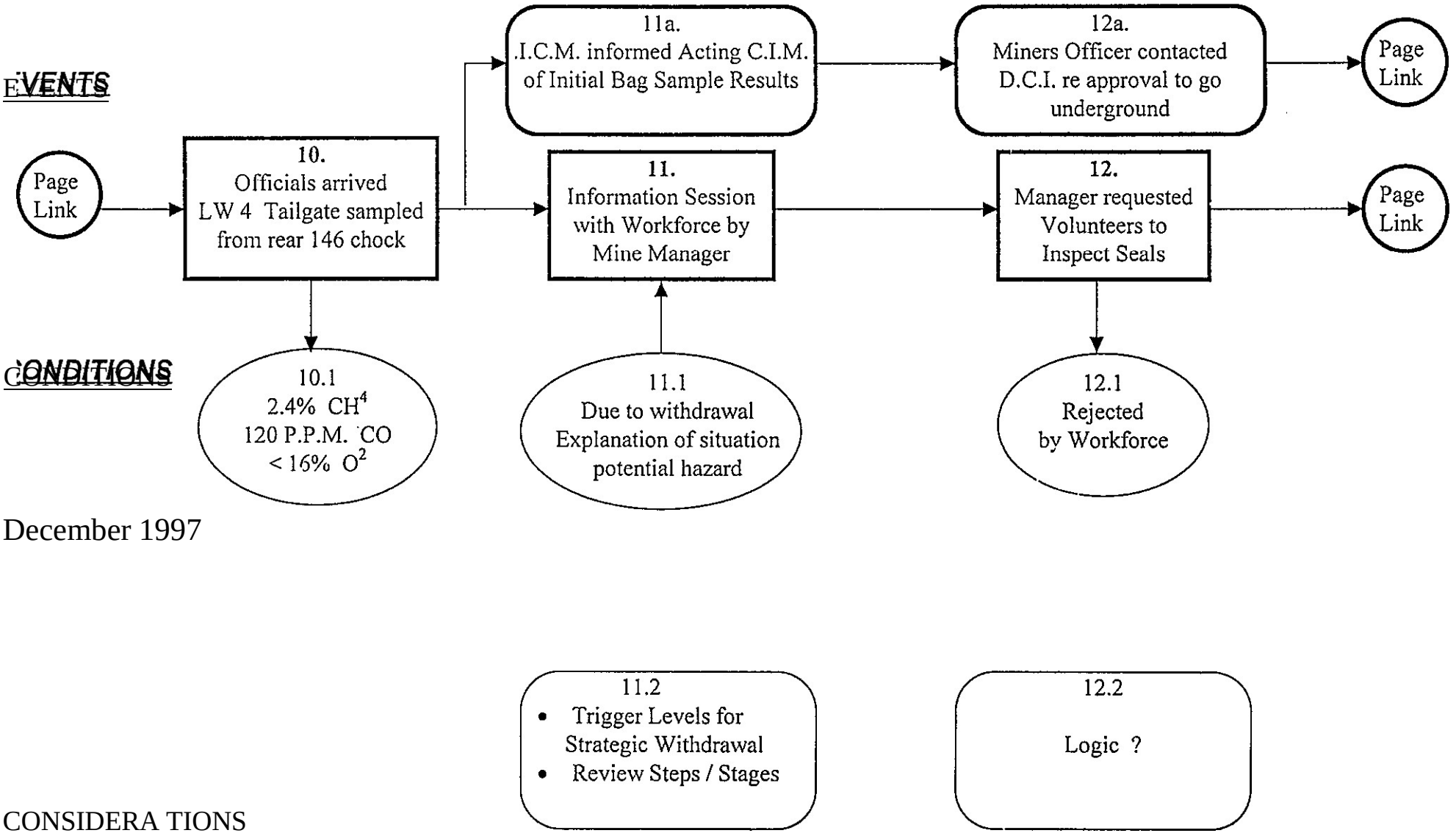
NORTH GOONYELLA - GOAF SPONTANEOUS HEATING, December 1997



NORTH GOONYELLA - GOAF SPONTANEOUS HEATING, December 1997

Monday
29 December 1997

8.00 pm - 8.15 pm

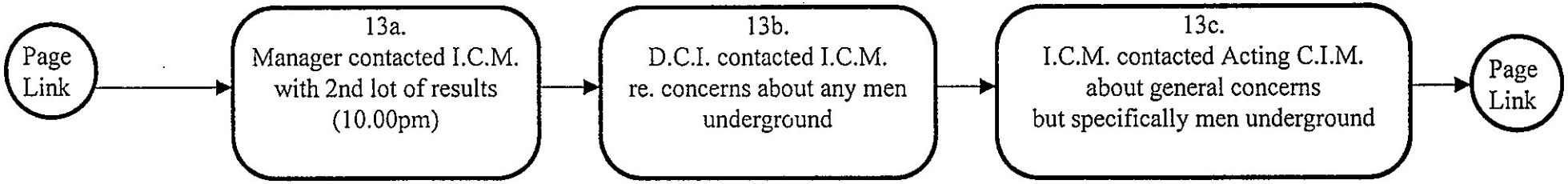


NORTH GOONYELLA - GOAF SPONTANEOUS HEATING, December 1997

Monday
29 December 1997

10.25 pm

10.30 pm



13.
Discussions taking place onsite

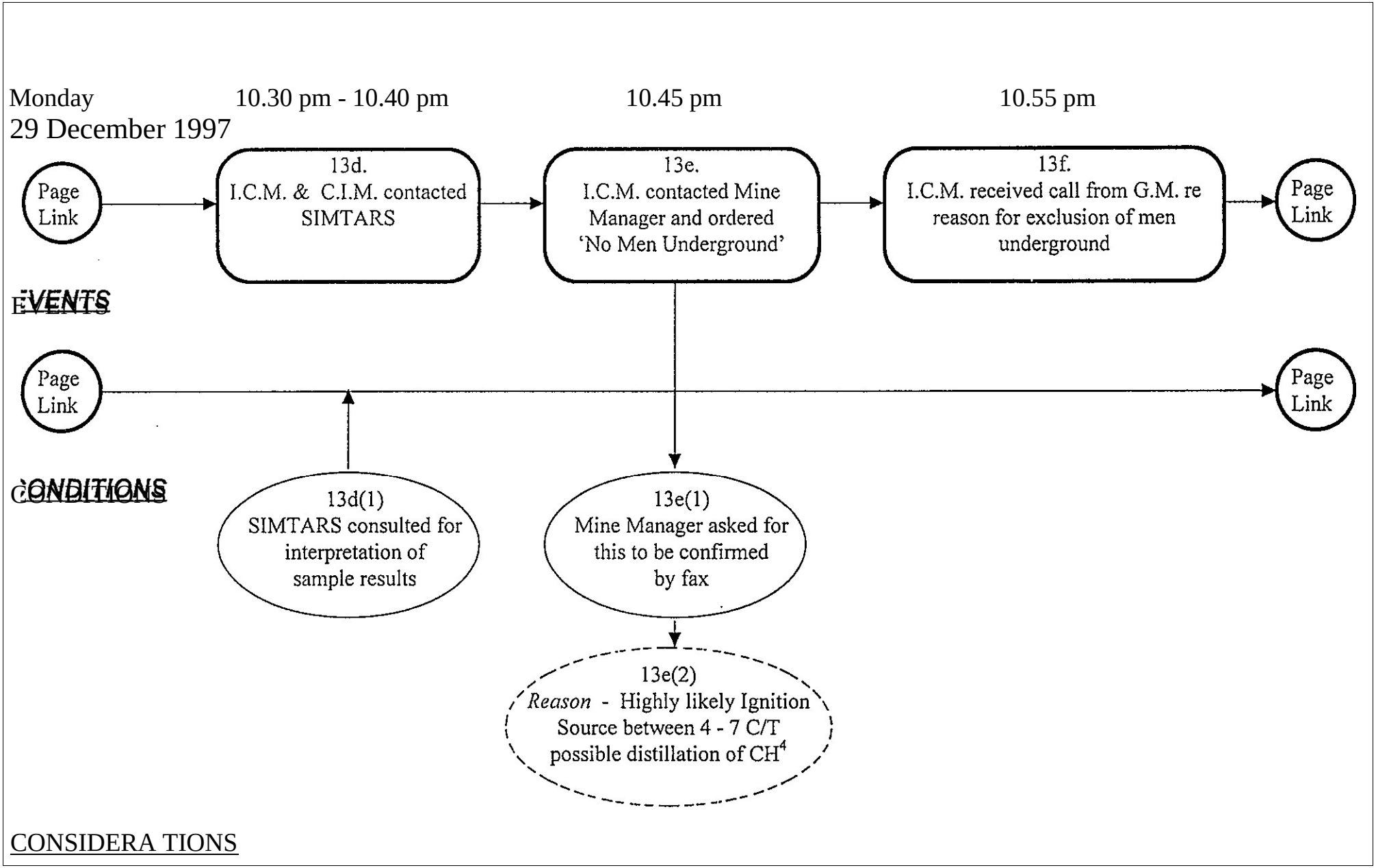
EVENTS

LinkLink

CONDITIONS

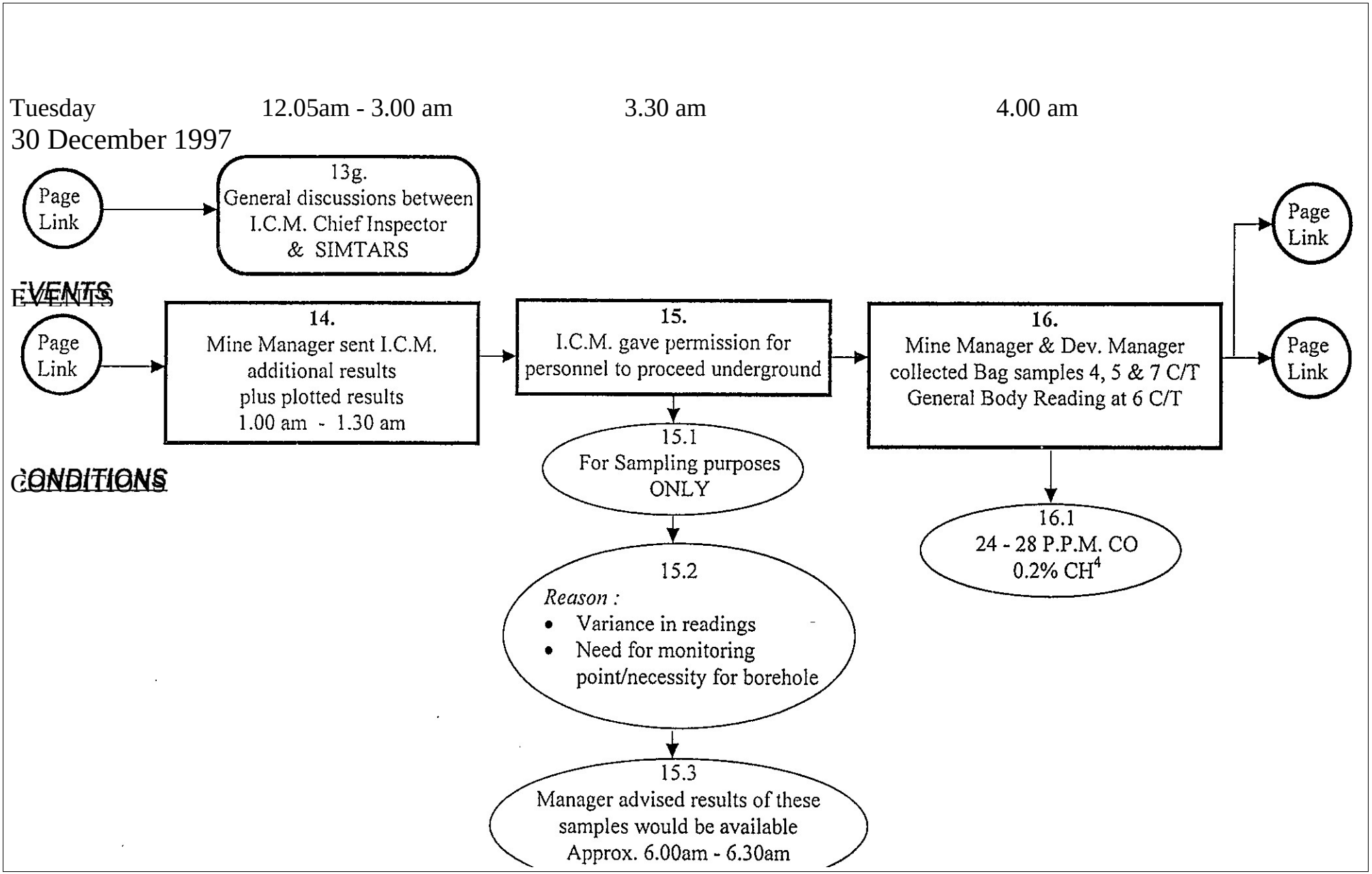
CONSIDERA TIONS

NORTH GOONYELLA - GOAF SPONTANEOUS HEATING, December 1997

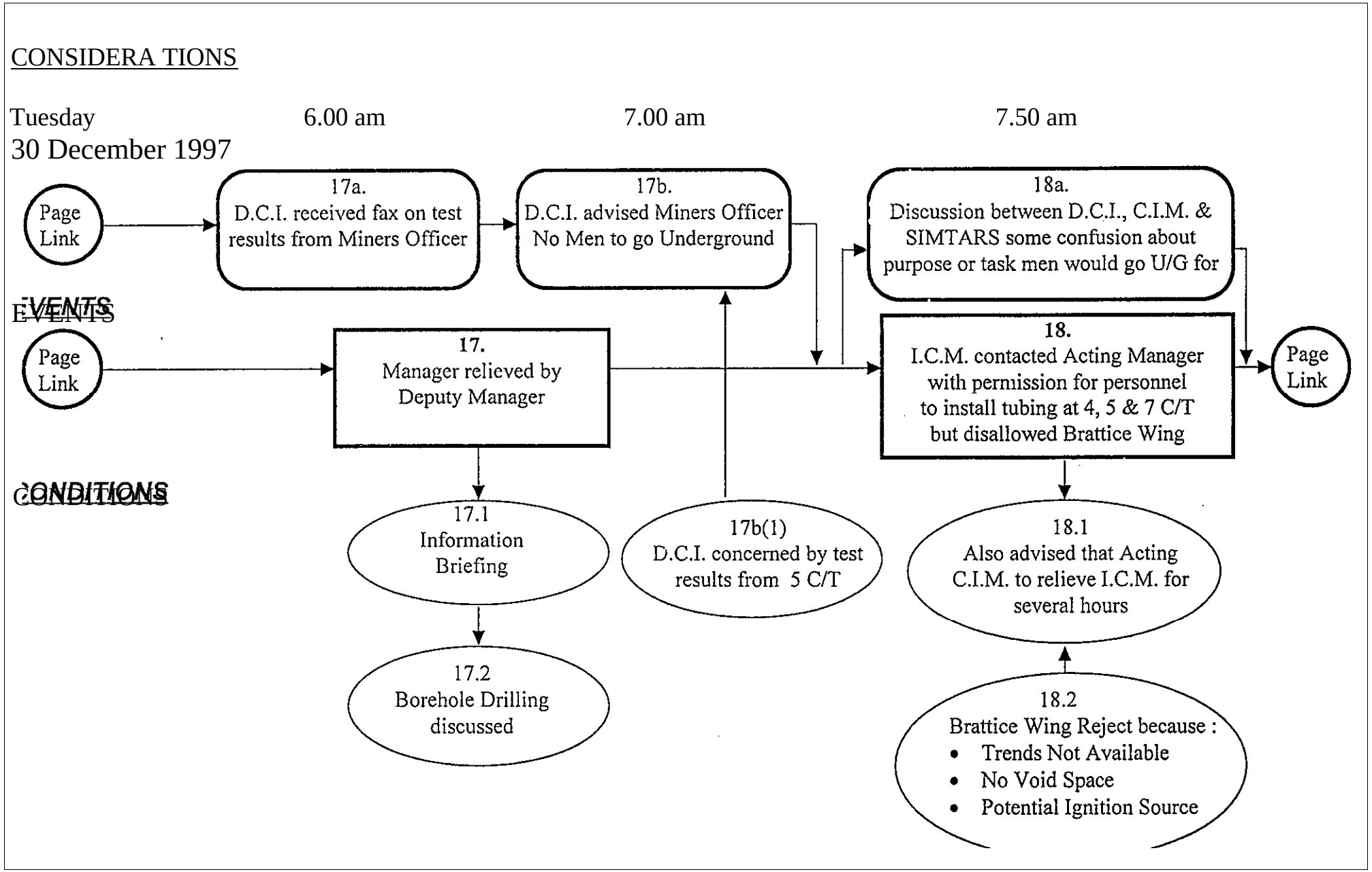


CONSIDERA TIONS

NORTH GOONYELLA - LW3 GOAF SPONTANEOUS HEATING, December 1997



NORTH GOONYELLA - LW3 GOAF SPONTANEOUS HEATING, December 1997



NORTH GOONYELLA - LW3 GOAF SPONTANEOUS HEATING, December 1997

CONSIDERA TIONS

Tuesday 8.00 am
30 December 1997

9.00 am

10.00 am - 10.30 am

EVENTS

Page Link

19.
Pre-Shift Talk conducted by Acting Manager

20.
Personnel U/G to install tubes
Vent Officer identified
Main Line for Sampling

21.
Calls made to D.C.I. &
Acting C.I.M. to update
Information

Page Link

CONDITIONS

19.1
Plan for shift state of events checks/tests required

20.1
Broad knowledge of system lacking

CONSIDERA TIONS

Identification/Coding of Tube Bundle Lines

NORTH GOONYELLA - LW3 GOAF SPONTANEOUS HEATING, December 1997

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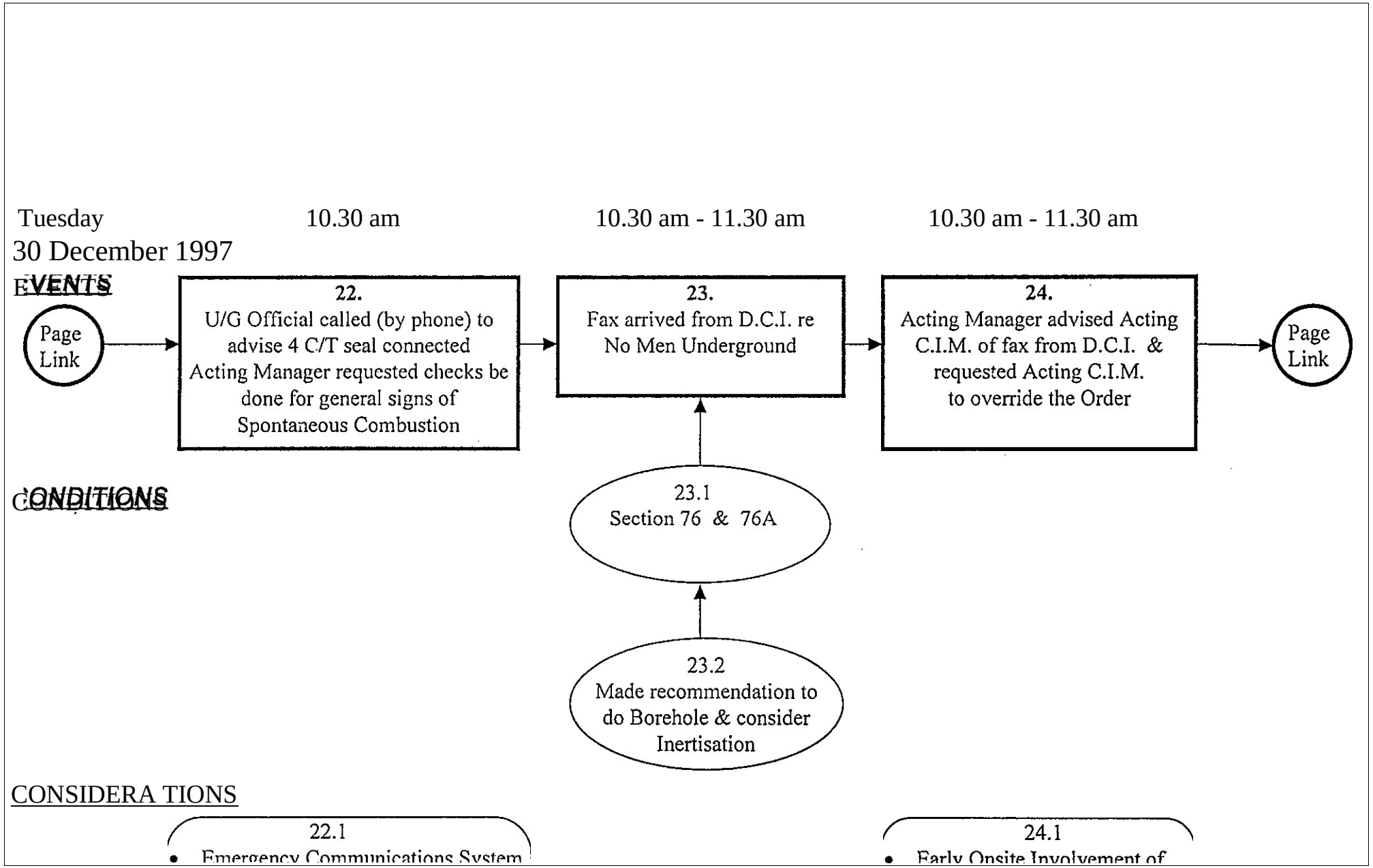
Installation

Local knowledge of System/Layout

Events & Conditions Charting

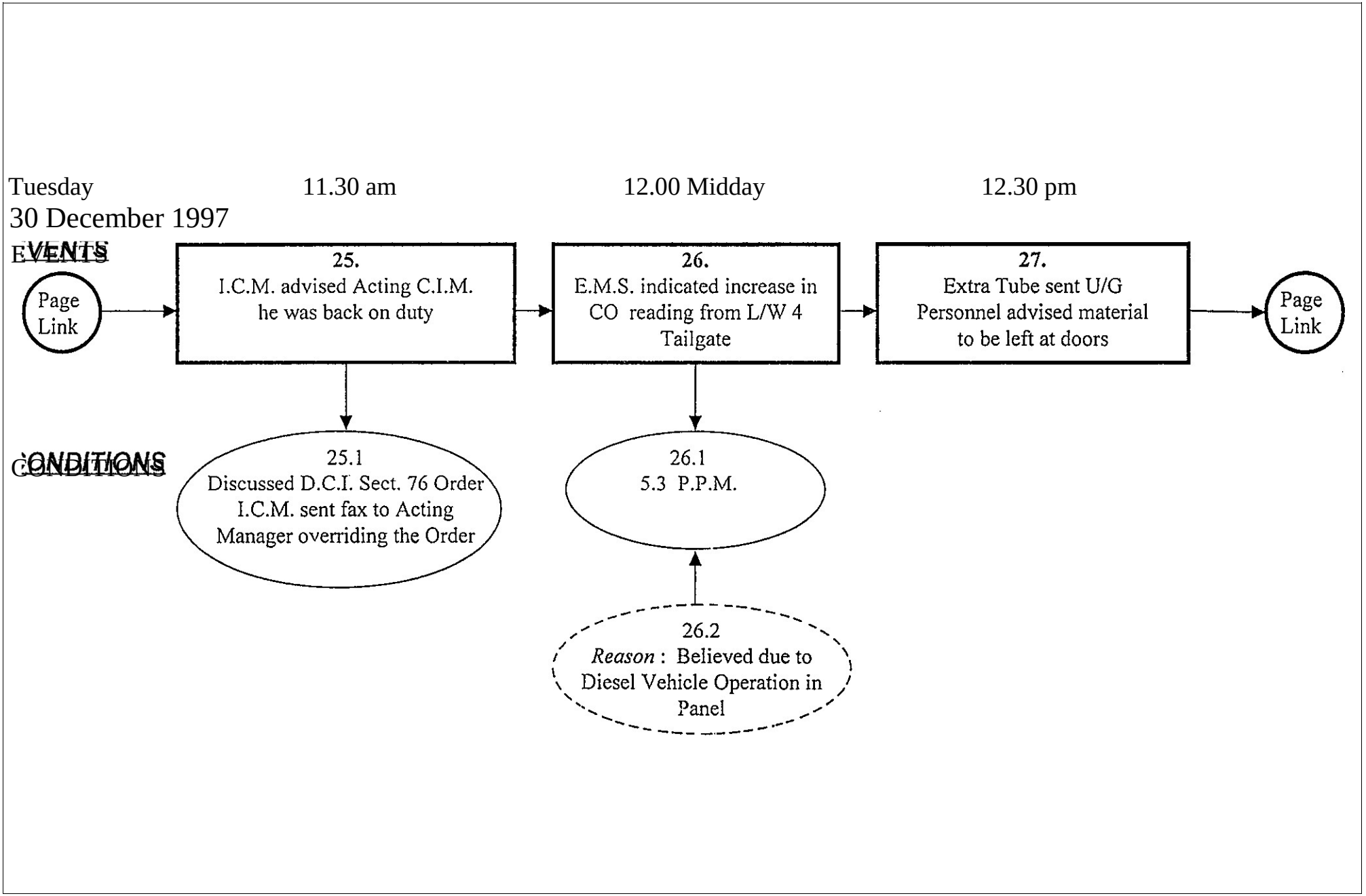
Methods

NORTH GOONYELLA - LW3 GOAF SPONTANEOUS HEATING, December 1997



NORTH GOONYELLA - LW3 GOAF SPONTANEOUS HEATING, December 1997

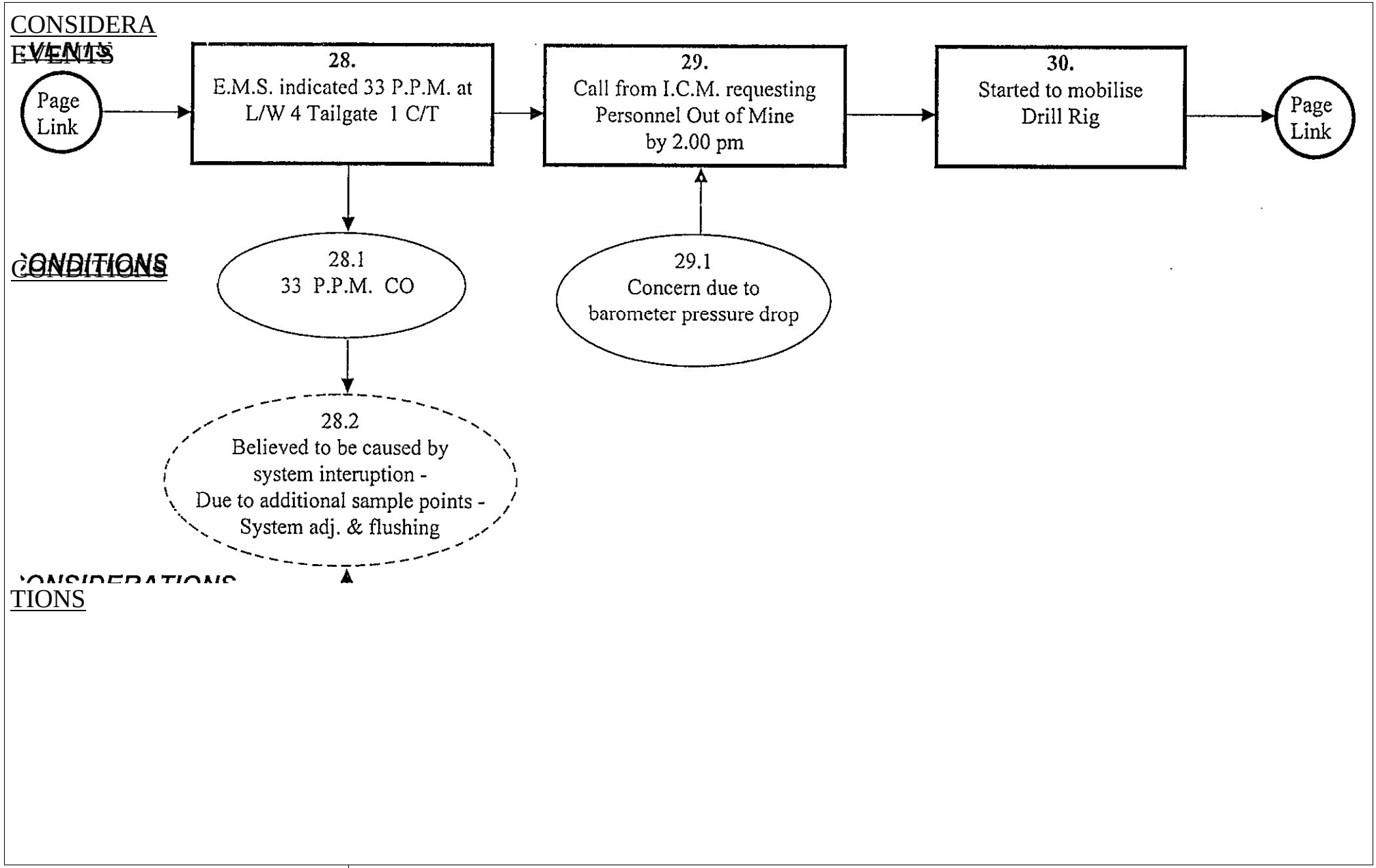
NORTH GOONYELLA - LW3 GOAF SPONTANEOUS HEATING, December 1997



CONSIDERA TIONS

Tuesday 30 December 1997	12.30 pm	12.4.5 pm	12.45 pm

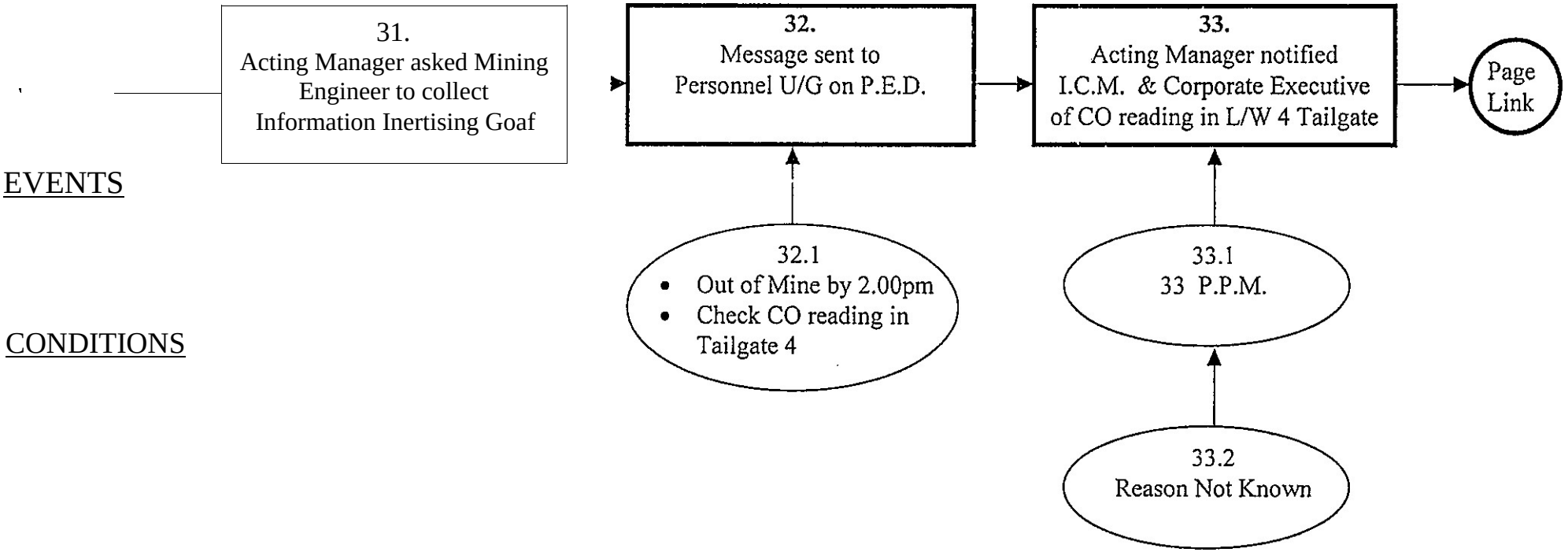
NORTH GOONYELLA - LW3 GOAF SPONTANEOUS HEATING, December 1997



NORTH GOONYELLA - LW3 GOAF SPONTANEOUS HEATING, December 1997

28.3
Supported by checking sample flows through CO analyser - Off-scale due to seal sampling through tubes.
Time for analyser to restablise

Tuesday 12.45 pm 12.50 pm
30 December 1997



NORTH GOONYELLA - GOAF SPONTANEOUS HEATING, December 1997

CONSIDERA TIONS

Tuesday 30 December 1997

1.45 pm

2.10 pm

7.00 pm - 8.00 pm