Country Fire Authority
Fire Investigation Report
Fire & Incident Reporting System (FIRS) Number: 1074299

FINAL REPORT
MORWELL OPEN CUT MINE FIRE, MORWELL, VICTORIA, 3840.

12/10/2006

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The purpose of this document is to provide information in relation to the fire that occurred. It is not the purpose of this document, nor is it the CFA's intention to apportion or determine liability with respect to any loss or damage to property, occasional by occupants.

All information and details regarding the incident are based on the best available data and observations made during the on-site data collection phase, and on any additional information provided during the preparation of this document.

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Fire Details

Region:	10.
Date of Fire:	12/10/2006.
Time of Fire call:	11:57 Hours – Reported to the Morwell Fire Station Watchroom.
Time of ignition:	Approximately 1040 to 1100 Hours.
Address:	MORWELL OPEN CUT MINE, MORWELL, 3840.
Mapping System:	Region 9 & 10 Map Book
Map Reference:	pg 529, ref 440 665.
Property Type:	Coal mine and power generation facility.
Incident Controller:	[redacted]
Rank:	Fire Officer.
Primary Brigade:	MORWELL.
Support Brigades:	There were 95 support brigades that attended this fire, their details are listed in Attachment 1.

Fire Investigators

Fire Officer [redacted]
Dandenong Fire Station.

Fire Officer [redacted]
Geelong Fire Station.

Investigation Log.

Time Called:	19/10/2006 16:00 Contacted by SFIC Rob Van Dorser
Time Attended Scene:	22/10/2006 10:00 Commenced canvassing of workers at mine.
Time Departed Scene:	24/10/2006 19:30
Time To Compile Report:	In excess of 150 hours.
Total Time on Scene:	42:00 each investigator.
Accumulated Total Time:	
- All Investigators	240 Hours.

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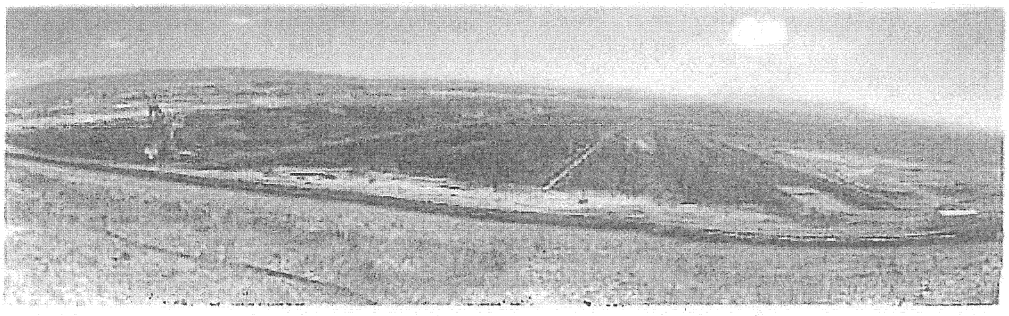
Introduction to Morwell Open cut mine.

The Morwell Open-cut mine is located several kilometers southwest of the township of Morwell in the Latrobe Valley. This is a brown coal mine that produces fuel for the 1600 megawatt, Hazelwood Power Station located on the southern perimeter of the open cut. The Morwell open-cut and Hazelwood Power Station are both owned and operated by International Power.



The mine area exceeds 900 Hectares and has a perimeter of over 14 kilometers. Brown coal is located below overburden with an average depth of 18 meters and has an obtainable depth of approximately 100 meters. The coal is mined using bucket wheel dredgers, these machines remove coal from a series of levels within the mine and are coordinated to ensure the continuous supply of fuel to the power station while other machines are either on maintenance, removing overburden or out of service for other reasons.

At the time of the fire there were 4 "bucket wheel dredgers" (DR) operating in the mine at the following locations:

- DR 25 was removing overburden on level M520.
- DR 11 was out of service for maintenance work at the south or "headend" of M620 with a "slewing conveyor" (S) attached. S94.
- DR 9 was operating on M720 with S96.
- DR 10 was operating at the head end of M820, on the lowest level in the mine.

See map on following page.

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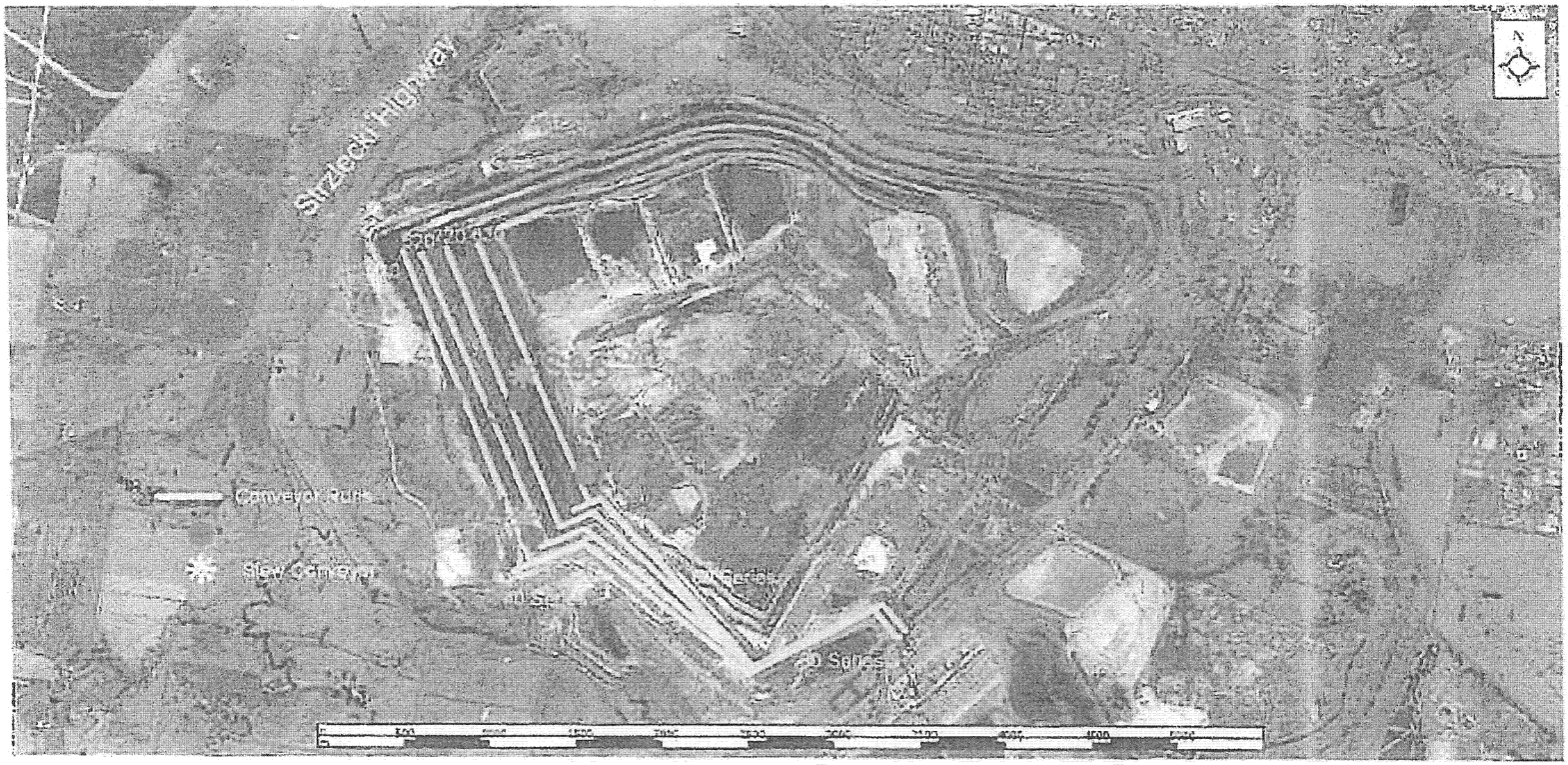

Coal is transferred to the power station via a large network of conveyors with a capacity of over 2500 tons per hour. These conveyors are located on the working levels of the mine and transfer the coal directly from the bucket wheel dredger via multiple transfer points to change direction of the coal to the raw coal bunker at the power station. The mine has operated since 1956 and provided Hazelwood's fuel needs from 1964.

Currently the mine employees 200 staff working on various arrangements of shifts and contract other essential activities to various companies. These companies include but are not limited to Alstrom, Belle Banne and Roche Theiss Linfox (RTL). Alstrom are the plant and equipment maintenance contractor, Belle Baine are engaged to maintain conveyors and RTL are a plant and operator hire company who provide earthmoving and other machines for civil works.

Investigation method.

The fire in the Morwell Open-cut occurred on the 12th of October 2006 and was reported to the Morwell CFA watch room by telephone at 1157 hours by the Mine Control Shift Manager [redacted]. The fire was under the control of the CFA until the 18th of October when it was formally handed back to International Power at 1800 Hours. On the 19th of October a CFA Fire Investigation Team was requested to attend and conduct an investigation to determine the cause and origin of the fire. Due to the fact that fire scene had been very disturbed from fire suppression activities, Operations Officer [redacted] from Morwell CFA had arranged with International Power to canvas all employees and contractors who worked in the mine on the 12th of October 2006. These discussions allowed us to obtain information relevant to the mine activities prior to and during the time of the discovery of the fire. The discussions allowed us to understand and explore the equipment and practices undertaken in the mining operation and associated works. The canvassing of the mine workers commenced on the 22nd of October and concluded on the 24th of October. During this period we were able to talk to 64 people, a summary of the keys point raised is located in the report.

Canvassing of the on site staff who worked on the 12th of October revealed common recollections of activities of the day and work being undertaken, all staff were open and gave freely of relevant information. However there was difficulty in determining accurate times that events occurred, this is most likely due to several factors including:

- The majority of personnel were not in view of the initial fire ignition.
- Most staff on the day of canvassing did not appear to wear watches when working in the mine.
- The time since the fire to the canvassing had been 10 days.
- There was no log of events or record of radio transmissions as they occurred.

During the canvassing process there were several discussions that required us to conduct physical examinations in the mine and at other locations. These were carried out with the assistance of International Power staff and were of high importance in the determination of cause and origin of the fire.

At the conclusion of the canvassing and physical examination process all possible scenarios were explored. They were all tested against the information obtained from the discussions held, physical, photographic, recorded and written evidence obtained. This information allowed us to determine the most probable cause and origin for this fire; this is based on all the available information acquired by and made available to the investigation team. The information obtained from this investigation and the findings into the possible and most probable cause of the fire have been viewed, validated and supported by a subject matter expert in mining operations, [redacted] Program Manager Industry Safety from the Minerals and Petroleum Branch, Department of Primary Industries.

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Owner/Occupier Details

Exposure Type:	Coal Mine, Mining Equipment, Power Generation facilities and Equipment.
Type:	Owner/Occupier
Name:	International Power
Address:	P.O Box 195, Morwell. VIC. 3840.
Phone BH:	5135 5702.
Phone MOB	0419 519 491.

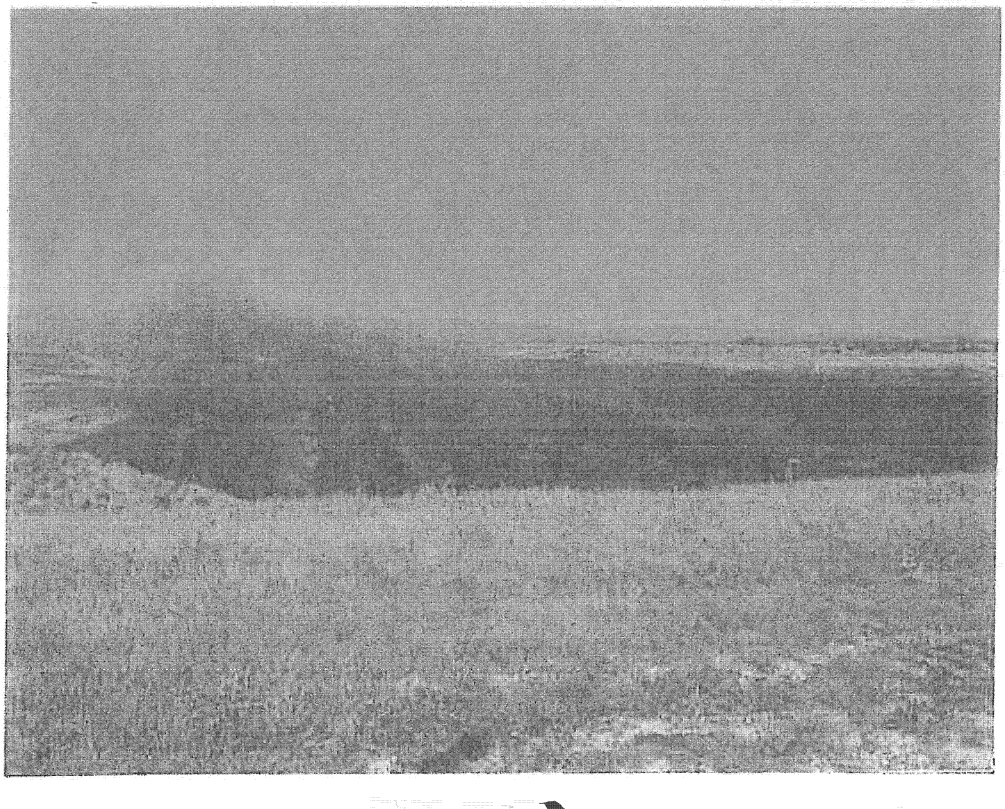
Insurance Details

Insurance Company:	American Home Assurance Company
Insurance Policy #:	114954.

Weather Details

The 12th of October 2006 was an unseasonably hot and windy day. This day saw several large wildfires burn extensive areas of bush land posing moderate suppression difficulties in the Latrobe Valley. Several of these fires were burning prior to daylight and were reported as having extreme fire behavior with-in hours of daybreak. The day was declared a day of Total Fire Ban in all districts except Gippsland.

The weather at the Morwell Open-cut was warm with an increasing wind; in anticipation of a windy day the mine staff were operating their water sprays throughout the mine to suppress dust and to reduce fire danger. The Acting Supervisor for Fire Services [redacted] had issued a "Fire Alert" between 09:45 and 10:00 hours. This is issued when there is a high danger of fire occurring in the mine, and it prevents all hot works and non-urgent maintenance being carried out. The reason it was called was due to the increase in winds and the temperature of the day. Most workers described increasing winds and raised coal dust as the morning progressed.



The above photo was taken by [redacted] a Mine Surveyor. It was taken from the northern side of the mine looking south, note the amount of raised dust and water sprays operating. The photo was taken at 1123 hours on the 12th of October 2006. See the Photographic Timeline for more details.

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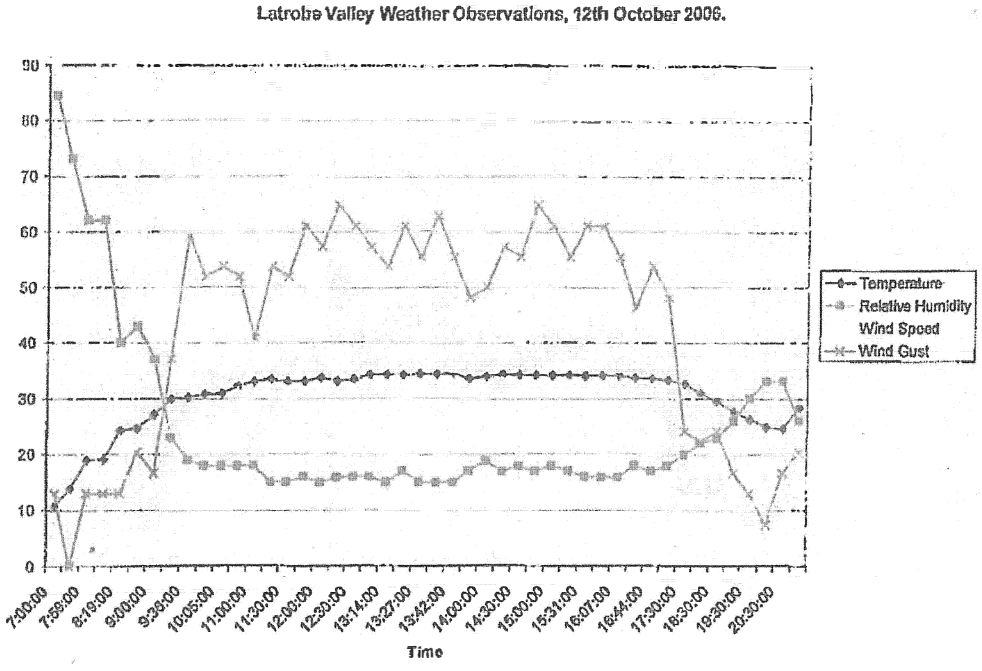
The investigation team has accessed the Bureau of Meteorology Automatic Weather Station data from Latrobe Valley Aerodrome located 11 Kms northeast from the area of origin. A graphical representation of the temperature, humidity and wind speed is included below. For a table of actual data recorded from observations at Latrobe Valley Aerodrome is included as Attachment 4.



From the data above and the reports from the workers present in the mine on the 12th of October, there was a rapid increase in wind speed and gusts in the hour just before the fire was reported to mine control. I [redacted] operating the overburden stacker observed wind speed measurements of over 70Kms after the fire was first detected. The stacker was located on the southern side on the floor of the mine.

Weather observations at 1200 hours, possibly 1 hour after ignition. Taken from the Latrobe Valley Airport.

Temperature: 33.7 °C
Wind Speed: 37Kph, Gusting to 57 Km/h, bearing 320.
Humidity: 14.9%,

Weather observations taken at 1100 hours from the Weather link device at the Fire Control Lookout.

Temperature: 31.9°C
Wind Speed: 32.2 Km/h, Gusting to 61.2 Km/h, bearing NNW.
Dew Point: 10.9°C

Data from the Fire Control Room weather station is included as Attachment 5. This is not a calibrated weather instrument, rather a computer operated device.

Mine Operations.

On the 12th of October 2006 the day shift began at 0700 hours. DR11 was scheduled to have a two-day maintenance outage for a crawler pads change and other works. The conveyor that DR11 fed, M620 was scheduled for belt inspections and also required electrical maintenance work to be carried out. At 0700 hours DR11 was taken off line.

International Power "Roadrunners" checked the M620 belt for idler replacements until approximately 0745 hours. To complete this task the roadrunners were required to travel between conveyor M620 and the topside fire service pipe. They recalled the topside sprays were operating at the time. Three quarters of the conveyor was inspected and then it was locked out for Belle Bain contractors at 0800 hours. The work permit was not issued to Belle Bain because the conveyor was wet due to the fire service water sprays operating, so they requested the belt be positioned to allow them to return at 1000hours to commence work. This was agreed by the Fire Service Supervisor.

As this occurred Alstrom workers attended the DR11 and found that it had not been positioned on the appropriate maintenance pad and requested the movement of the dredge to allow work to commence. This movement required DR11 to relocate closer to the headend of M620, as this would take some time the maintenance crew decided they would return after morning brew to start work. A D8R bulldozer was also due for maintenance work and had been moved from the overburden dump to the headend of M620 also.

The maintenance work that was programmed required the delivery of crawler pads to DR11 from the store, a transport contractor [redacted] is used to conduct these deliveries. [redacted] truck arrived at the main gate of the mine at 0910 hours and traveled along the clay roads on the southern batters to reach DR11. With the assistance of one maintenance worker, [redacted] laid out the crawler pads in front of the dredge to allow them to be replaced. He was then required to pick up some used crawler pads located on the northern batter access road to level M620. He proceeded to drive his International semi-trailer across the coal formation of M620 to reach the tailend and onto the northern clay road. He recalled the sprays were operating at the time of his crossing and he had followed a worn track across the coal. The track was midway between the topside fire service pipe and the coal batter. At one point he was required to divert from the tracks to miss a boggy area of wet coal, he recalled that he might have had to drive through wet area. He reached the crawler pads where he turned around so he could load the pads from the passenger side of the truck. This is visible in the photo below, taken at between 1030 and 1045 hours.

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Approx 10:30
12/10/2006

When [redacted] was loaded he turned around again and then left the mine via the northern batter roads, he exited the main gate at 1115 hours.

While [redacted] was unloading his truck, at between 0945 and 1000 hours, the Fire Service Supervisor [redacted] had called a "fire alert." The fire alert was communicated to the mine shift manager [redacted] and the maintenance supervisors.

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Fire Activities.

Shift Manager [redacted] was notified of a spot fire at the tail end of level M620 between 1045 and 1050 hours, this was confirmed by [redacted] as he went and conducted a visual check out of his control room and saw smoke from the tail end of M620 only. [redacted] is employed at the fire service control room; he first saw the fire occurring at approximately 1050 hours and recalled the fire was only at the tail end of M620 also.

[redacted] was traveling along the top of the mine inline with M620 and reported that he saw several fires on the M620 formation. He recalled the fires were not out far from the topside fire service but there was several of them along the level from the tail end, he believed the time to be 1115 hours when he called the control room. He was told the fire was in hand.

The first workers who attended the spot fire on M620 tailend, stated the fire was burning in close proximity to the M620 tailbox, and was between the conveyor and the topside and bottomside fire service pipelines. An anchor post for the tailbox was on fire and there was fire burning in loose coal on the bottomside of the conveyor. These workers recalled there were a lot of embers moving around and the wind was quite strong. They stated the fire moved away from them towards the head of M620 as well as progressing down to M720 also. When they arrived at the tailend they did not recall seeing any other fires on the formation. The photo on page 14 shows mine worker [redacted] indicating where the fire was burning between the fire service main and the M620 conveyor tailbox.

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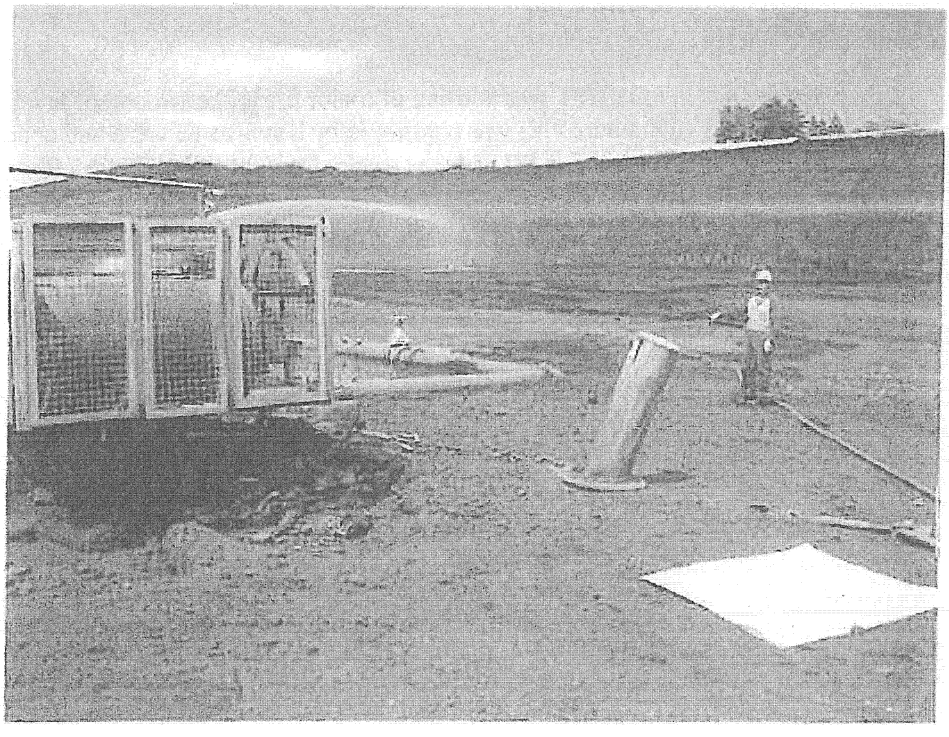

Due to the fire alert the maintenance supervisor decided to remove the new crawler pads from the coal at DR11, he sent the crane to remove them, as the crane was finishing this task the crew at DR11 became aware of smoke and then a fire burning on the north side of DR11. One worker, [redacted] saw further beyond DR11 and the slewing conveyor S94, and recalled there was smoke and dust coming from further along the formation of M620. The crane driver contacted the control centre and advised [redacted] of the fire at DR11.

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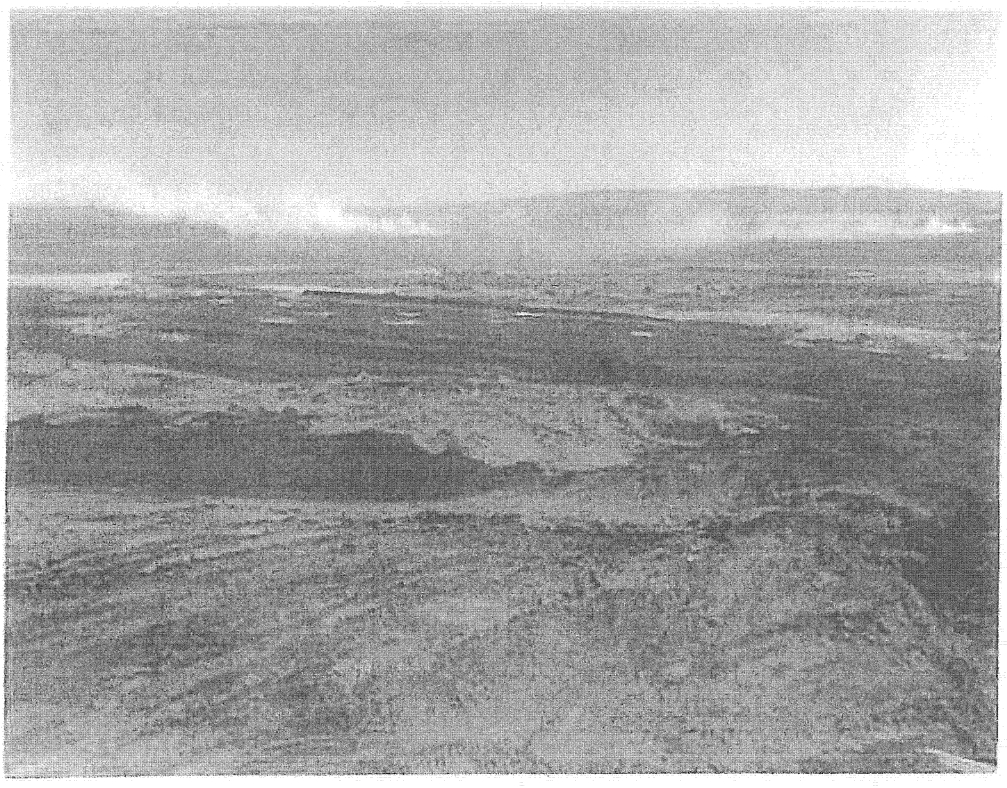
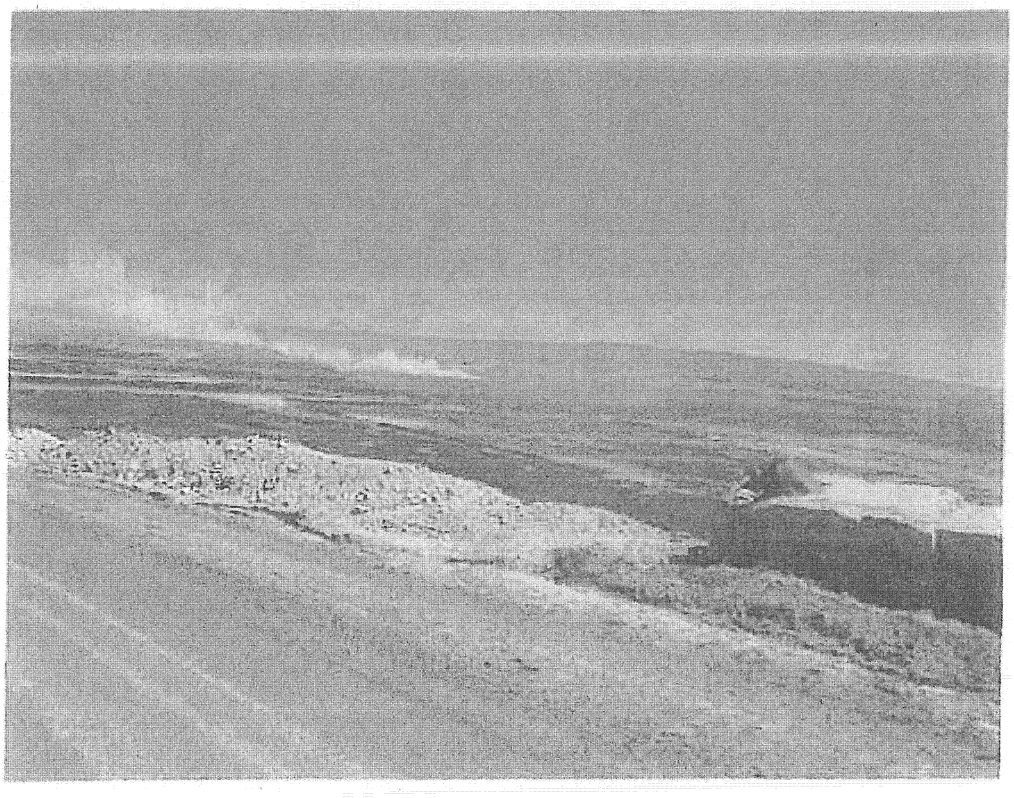
Shortly before 1148 hours a call was made over the open radio channel requesting that all available leading hands and roadrunners report to M620 to assist with fire suppression. The operator of the overburden stacker heard the call and slewed his machine around to see smoke issuing from one end of the batter to the other. He took photos of this on his mobile phone. See Below.



At the same time the mine surveyor [redacted] was driving down the southern batters towards the main transfer station and then onto DR11. He took several photos that show the fire from the tail end to the head end of the M620 batter, and of the fire burning around DR11 and Slew 94. The first of his photos was taken at 1152 hours. See below.



The logbook from the watchroom at the Country Fire Authority, Morwell Fire Station shows the first call for a fire in the open cut was received at 1157 hours. This call was captured on a radio and phone logger and the fire call was made by [redacted]. The CFA arrived on scene at the Morwell Open-cut mine at 1207. A copy of the logbook is in Attachment 3. When Fire Officer [redacted] arrived on scene at the Morwell Open Cut, he saw three fires along the length of batter M620. It is most probable the fire was burning for over 1 hour prior to his arrival.

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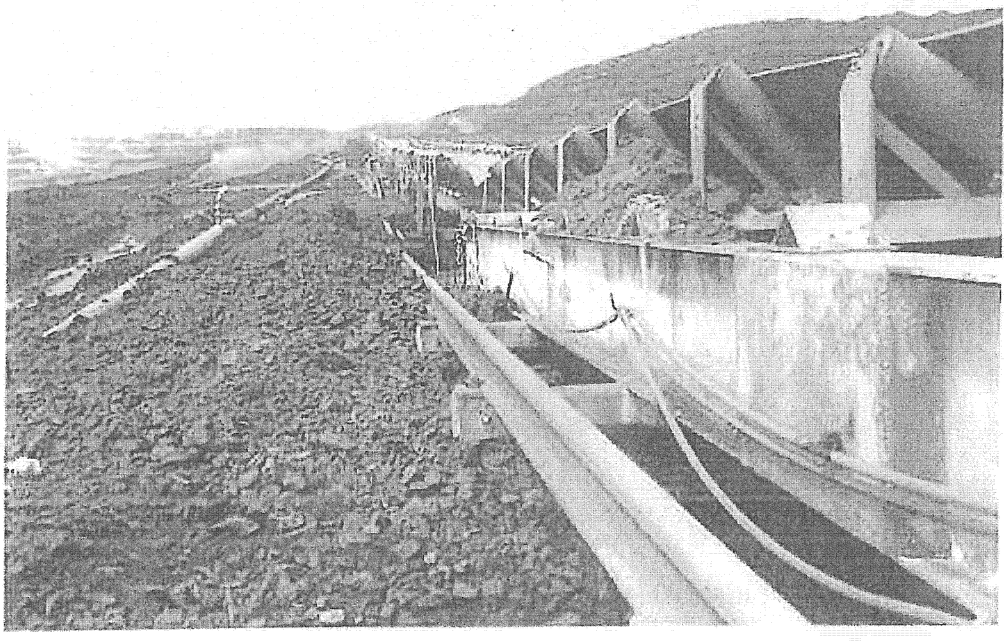
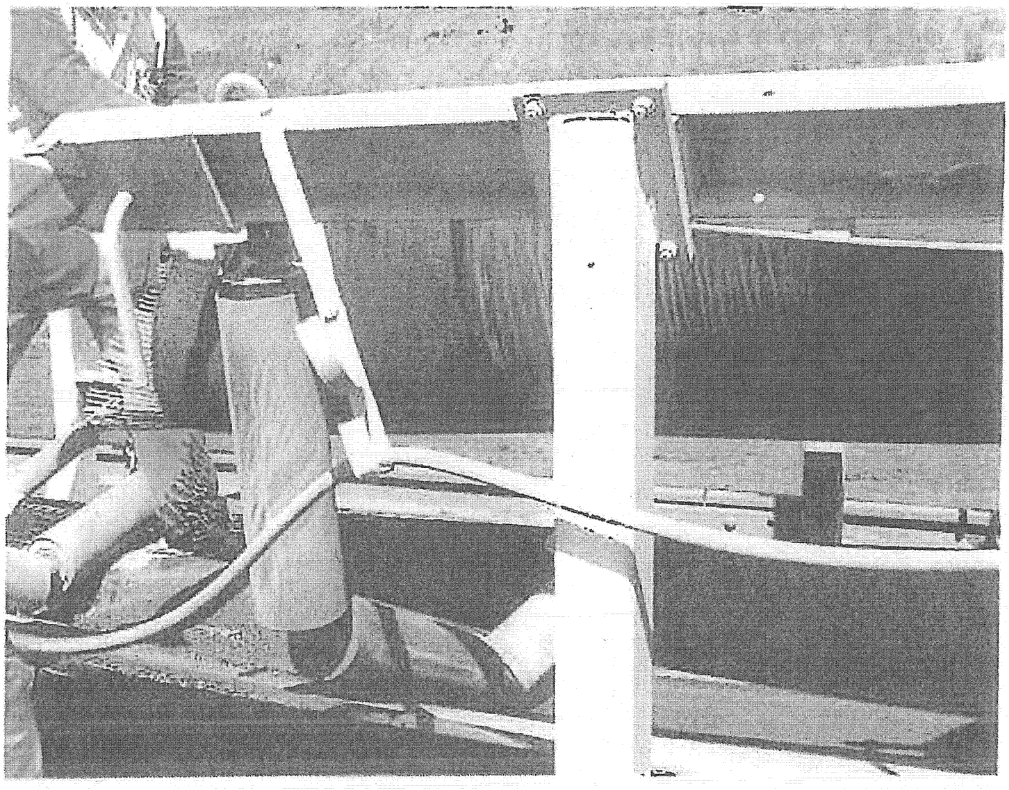
Cause and Origin

Eye witness reports from multiple sources observed the fire only at the tail end of the M620 level. The first workers to the tail end described the fire as being in the vicinity of the M620 conveyor tailbox. The fire was between the bottomside of the M620 conveyor and the bottom side fire service, and also between M620 and the topside fire service. There was also fire around the M620 tailbox. The most probable area of origin was at the tailend of M620 in close vicinity to the conveyor tailbox.



The point of origin was most probably at conveyor unit 157, 852 meters from the head of M620. The remains of the idler assembly that failed were most likely transported on the conveyor to the tailend. The conveyor belt was destroyed to the south of the idler and not north of the belt, it is probable the fire that burnt the belt was a secondary ignition from the same source, see the photo below and note the damage to both the feed and return belts on the left side of the image.

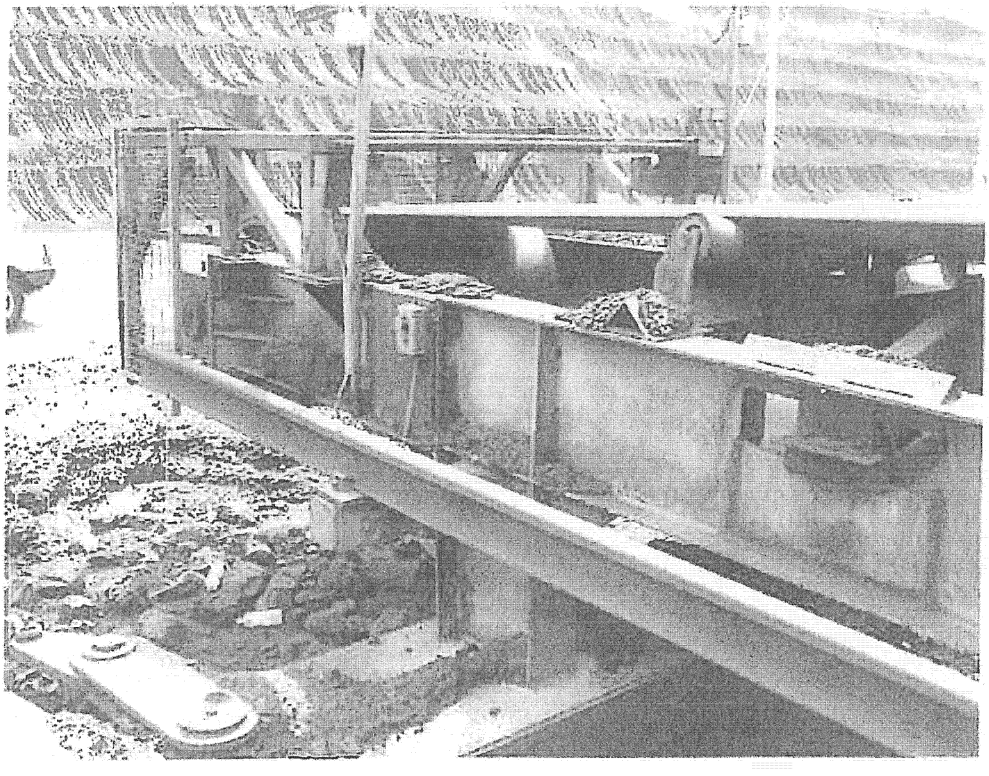


The fire at the tailend, in the vicinity of the tailbox was noticed at the same time the wind speeds had increased. This was several hours after the conveyor was shutdown for maintenance. The point of origin of the actual coal fire was most probably where the heated remains of the idler assembly landed in the built up coal at the tailend of M620, close to the tail box.

Area of Origin

Eye witness reports from multiple sources observed the fire only at the tail end of the M620 level. The first workers to the tail end described the fire as being in the vicinity of the M620 conveyor tailbox. The fire was between the bottomside of the M620 conveyor and the bottom side fire service, and also between M620 and the topside fire service. There was also fire around the M620 tailbox. The most probable area of origin was at the tailend of M620 in close vicinity to the conveyor tailbox.

The following three pictures below and on the next page are of the area that the fire was first seen in this is around the tailend of conveyor M640. Note the build up of coal dust on the tailbox and conveyor. This build up is what is left after the fire and the coal buildup was hosed down to extinguish it.



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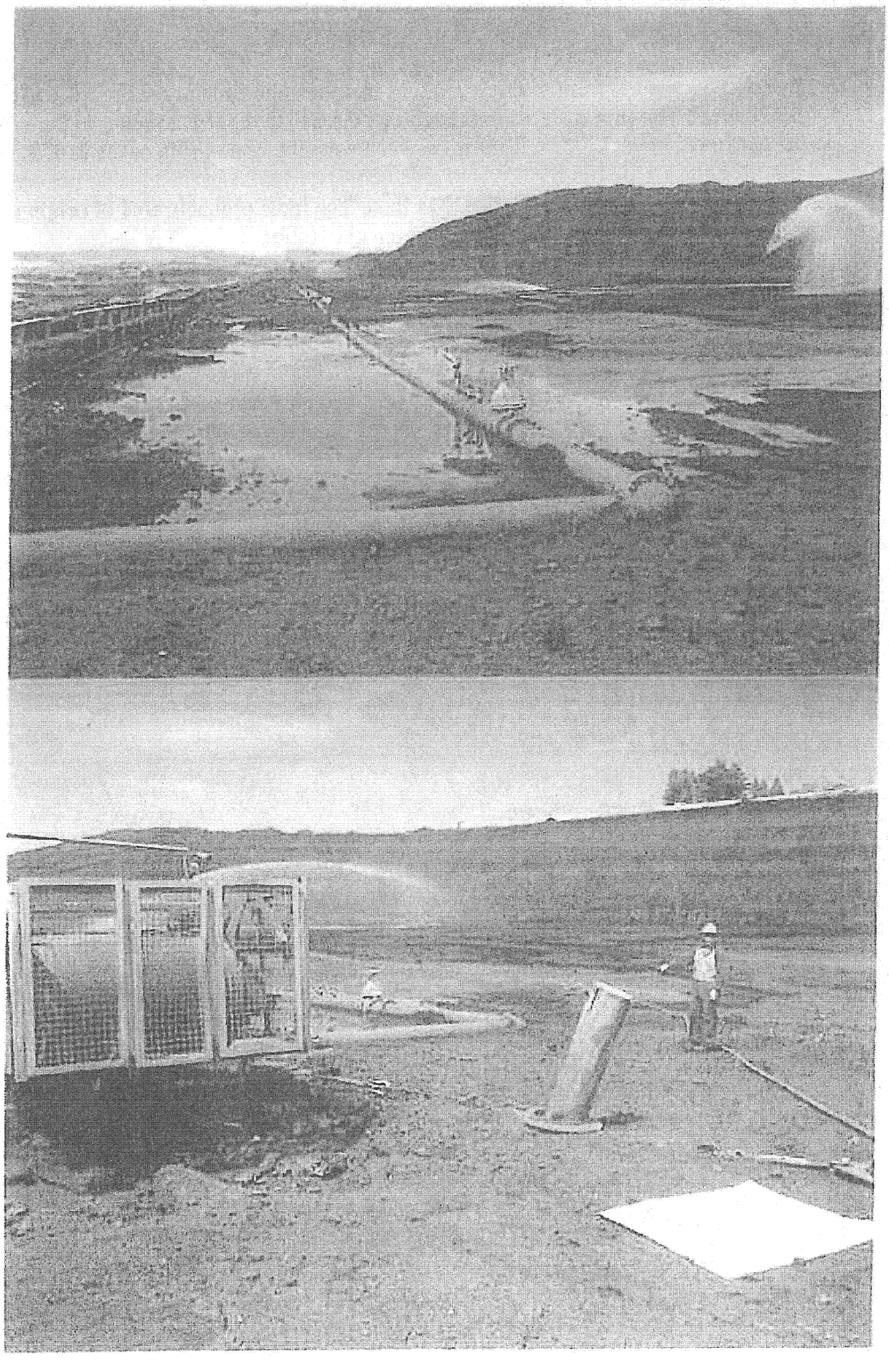
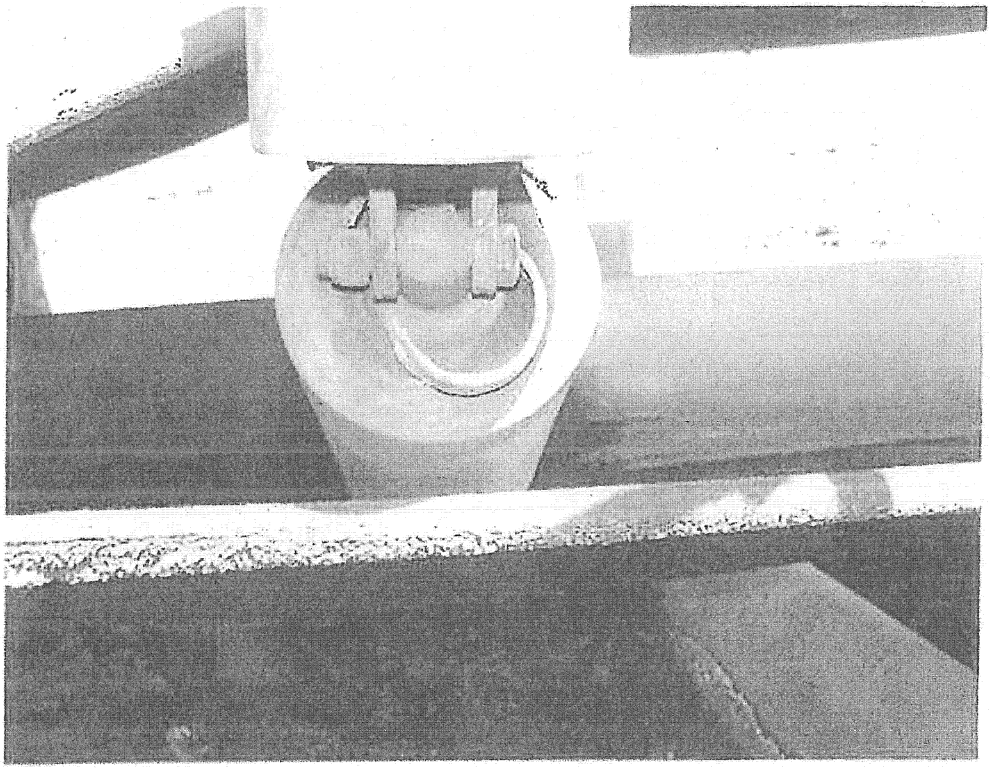


Point/s of Origin

The point of origin was most probably at conveyor unit 157, 852 meters from the head of M620. The remains of the idler assembly that failed were most likely transported on the conveyor to the tailend. The conveyor belt was destroyed to the south of the idler and not north of the belt, it is probable the fire that burnt the belt was a secondary ignition from the same source. The fire at the tailend, in the vicinity of the tailbox was noticed at the same time the wind speeds had increased. This was several hours after the conveyor was shutdown for maintenance. The point of origin of the actual coal fire was most probably where the heated remains of the idler assembly landed in the built up coal at the tailend of M620, close to the tail box.

The following photos show the destroyed idler bearing and the conveyor looking towards the tailend.



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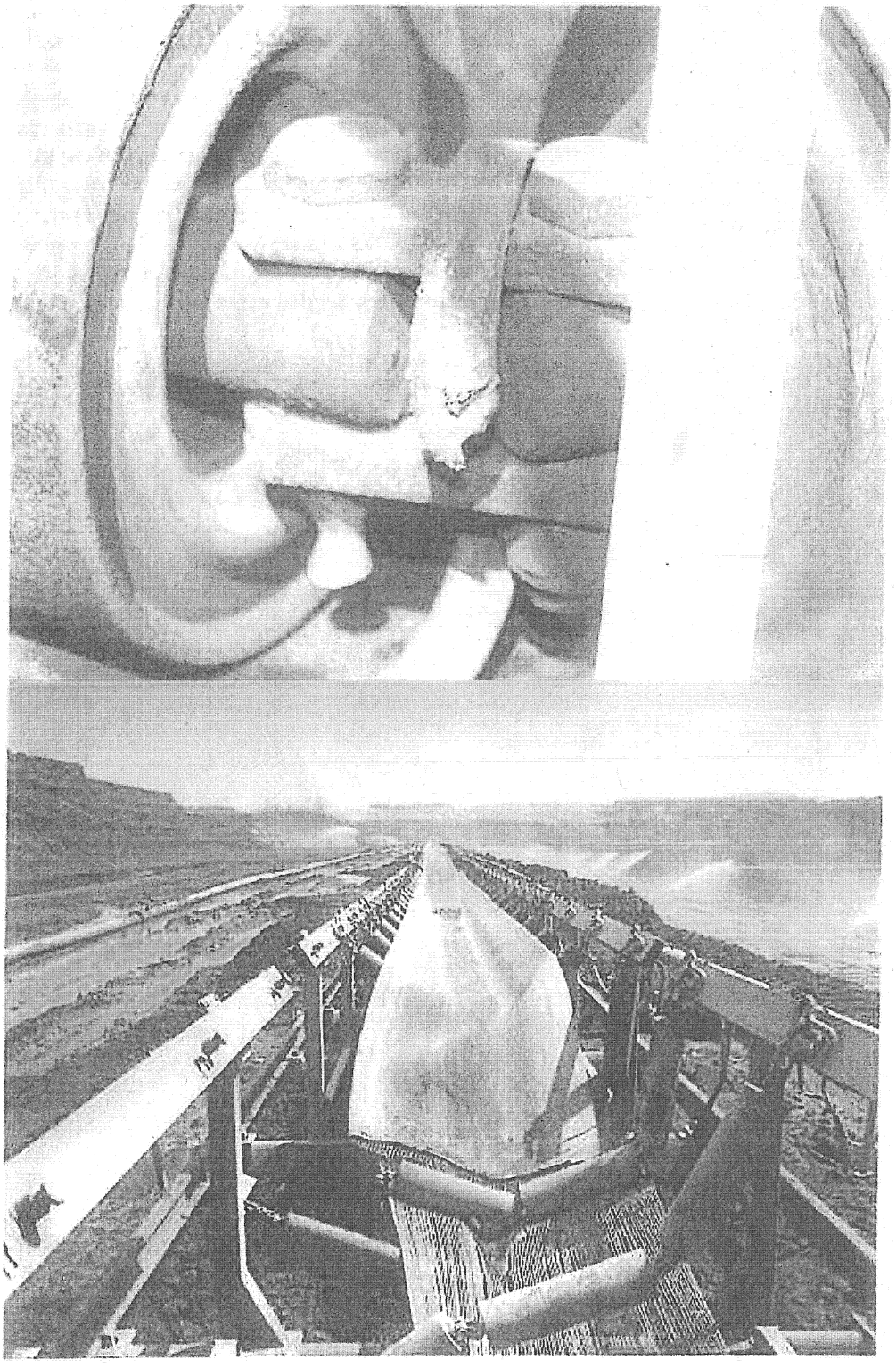

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Cause of Fire

Cause of Fire: Accident

Ignition Factor: Part failure.

Type of Material Ignited First: Coal or coal dust.

Form of Material Ignited First: Form of material not applicable

Equipment Involved in Ignition: Conveyor Idler Bearing,

Comments
First Idler Bearing Set, on conveyor unit 157. The lower bearing collapsed in the bottomside, feed idler, the roller had ground away the nut and bolt below it. There was evidence the conveyor had run for a period of time after the failure as the idler had destructed and the only remains of the bearing was a molten bearing cover.

The most probable area of origin of this fire was checked against the CFA's Fire Incident Reporting System (FIRS) and the query matched 31 other fires in Region 10 Gippsland that occurred since 1998. In 25 of these cases the material first ignited was listed as Coal. And in all 31 cases the Ignition Equipment was determined as either a conveyor or a bearing. A copy of this FIRS query in Attachment 6.

The other possible causes that can not be categorically ruled out, but are less likely to have caused the fire are:

1. The movement of a mine maintenance vehicle along M620 conducting a conveyor inspection. This vehicle traveled between the topside fire service and the M620 conveyor. It was required to complete a U-turn and return along the same track. The water sprays were on at the time of this activity. It is not determine whether the vehicle contacted with coal or caused wet coal to contact its exhaust. This is less likely to have caused the fire because it traveled along the level at approximately 07:30 hours and it only went 3/4 of the entire length.

2. The movement of a transport contractor's semi-trailer across the coal face on level M620. The vehicle was required to drop maintenance parts at the head end of M620 and then proceeded along the coal face to the tail end where it picked up other equipment and then left the mine. It traveled in the center of the formation to avoid wet and boggy coal; this is a less likely cause because the fire was first identified between the fire service pipe and the conveyor.

Plant and Losses estimates.

The following is a list of estimated losses that were provided by International Power.

CS2 (M720, M740, M760 conveyor systems)	
• Extensive belt damage. (approximately 630 meters replaced)	$ 200,000.
• Extensive electrical damage. (M720 head end and M740)	$ 200,000.
• Mechanical & structural damage. (pulleys, impact curtains, 200 idler sets replaced, painting)	$ 300,000.
• High Voltage supply cable repairs.	$ 100,000.
CS1 (M620, M640, M660 conveyor systems)	
• Extensive belt damage. (approximately 2430 meters to replace)	$ 800,000.
• Extensive electrical damage. (M620 head end and M640)	$ 300,000.
• Mechanical & structural damage. (pulleys, impact curtains, 1200 idler sets replaced, painting)	$ 500,000.
• Hopper H1828 rebuild.	$ 250,000.
• High voltage supply cable repairs.	$ 100,000.
Dredger 11 Estimate only.	
• Extent of damage currently being assessed by IPRH and independent.	
• Some structural damage evident.	
• Electrical wiring damage evident.	
• Pulleys, idlers, belts require replacement.	
• Extensive painting works required. (assuming repairable)	$6,800,000.
Slewing Conveyor 94	
• Extensive electrical damage.	$ 500,000.
Bulldozer	
• Caterpillar D8R	$ 750,000.
Production Losses	
• Approximate costs.	$1,000,000.
Preliminary total cost of plant and lost production.	**$11,800,000**

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Canvassing of mine workers who were at the mine on the 12th October 2006.

1. [redacted]

Working on overburden line or stacker when 1st called.
Went from OB to M520.
Fire was almost to tail end along all of the batter.
Went to slew conveyor. Was with [redacted] and [redacted] (together).
At 1100hrs went to 25D to stacker, 1145 called. Took photo on phone camera at stacker.
Didn't know if there was a fire alert but red light was on the OB stacker. Possibly a Fire Alert. All operators have a radio on.
"Road runners" look after conveyors. Don't know when they last cleaned M620 conveyor.

2. [redacted]

Looking after conveyors. Checked M520 line.
Called @ 0745-0800hrs to issue a permit to run conveyor belt up for Belle Baine. Locked out belt. M620 @ 0800.
Maintenance came down but dredge needed to be repositioned for works; on a graded "maintenance pad".
D8 Dozer was positioned for crawler pads also.
After moving DR11 & S94 went up top. Fire alert declared approx 1000Hrs.
At 1100 went to DR10 at head end of mine via OB stacker.
First heard for call on radio for road runners to get to DR11. Call from Control Centre [redacted]. Saw a lot of smoke from tail end, thick, Noticeable from distance away. Heard call to shut down DR25 and move.

3. [redacted] – Boiler Maker for fire service.

Run water sprays on all different levels. Worked 720 & 820 levels. Putting on sprays from rising conveyors.
Heard on open channel of fire behind DR11. Saw [redacted] at tail end of 620. Fire along all of 620 when first got there.

4. [redacted] Fire service and operator

Moved D8R dozer to DR11. 0830 same time that Alstrom requested DR11 to be moved.
[redacted] called Fire alert when wind went up 0945 to 1000Hrs.
Working at Head end to start booster pump. 5 min after call on scene at DR11. Fire first close to DR11 on ground within meters. 1 shift person [redacted] at Dredge 11.
Turned on sprays from hydrant. Stayed at Dredge until 2-12 worker at dredge then went up top.

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5. [redacted] – Acting supervisor for Fire Service. Normally Leading Hand.

Organized sprays from 7am. Called Fire Alert at 9.45 – 10.00. Contacted shift manager. Called maintenance supervisor. No burning or welding. Watching all sprays from office on north side of mine. Went to DR11 on call over radio. Called for RTL tankers to attend. Tankers went to tail end of 620 and stopped at first fire. Fires from tail end in patches all the way along batter.

6. [redacted] – Shift Manager

Organized maintenance for DR11. Crew needed to move DR. DR11 taken out at 0700. Only moved 10 meters back. 3 operators to position it. [redacted], [redacted] and [redacted]. [redacted] on scene at DR11 to remove DR pads when fire alert called. Report for spot fire at tail end of 620 conveyor by [redacted] And just after a fire alert was called 10 min later call for fire tanker to tail of 620. RTL had fire tanker and was on route to fire. Spot fire reported at possibly 1010, same time as fire alert. To go on open cut need modified exhaust and brakes done. Brakes sleeved. Only aware of tail fire at 1020. CFA advised of call. From [redacted] at fire service. Aware of fire at DR11 at approx 1040. DR11 crew called control because of fire at DR11. From initial call, went onto balcony saw smoke at tail end only.

23-10-06 - Roche Theiss Linfox called in fire at tail end of 620 to [redacted] at 1010. Reiterated fire definitely started at tail end. No smoke at head. CFA required through [redacted]

7. [redacted] - Band 3 Operator

Look after conveyor systems. On 12th road running. At 0800 did a permit for Alstrom. Did move for DR11 for Alstrom. Alstrom left at 0930. At 1020 took truck into mine to 640 conveyor. Waited at 640 conveyor with crane driver removing tracks. Saw smoke between DR11 and 564. Entered from head end. Crane driver rang fire service. Rang Control Centre from Dredge 11. Wind moved fire around everywhere.

8. [redacted] – Operating the stacker

Heard call for assistance. Remained with stacker. OB in floor of the mine on east side. Smoke first visible at tail end of 620. Wind gauge on stacker hitting 70 km/hr +. Told to stay with stacker.

9. [redacted] – Driver of DR9

Smelt smoke when walking around machine. Contacted control and was advised of fires at DR11. Saw smoke at both ends of head and tail end of 620.

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10. [redacted] – Driver Over Burden DR25 from 0710

Seen smoke at 1115. Called Control Centre. Told in small fire at tail end also. Fire at DR11. Sizeable smoking/ Went back to DR25. Spent 4.5 hrs on hose at tail end of 620.

11. [redacted] Leading Hand

Called at 1130-1200 to DR11. Radio notification came from DR9 Hopper, in Brew room when called. Saw smoke at Head, tail and middle. 6-12 at DR11 when arrived.

12. [redacted] Driver DR9

Towards 1130-1200 heard radio report. Saw fire from tail end when going for lunch. Entered top side of 620. Tail end alight from north end.

13. [redacted] – Bank 3 Operator

Manning TS2 Stacker. Head of call on radio for road runners and Leading hands. Poss 1030 or 1130. Phone says 1149. 1st photos. Slewed machine and took photos.

14. [redacted] – Operator Hopper of DR25 OB in 1000hrs (7-10 stacker)

After approx 1030 hrs at DR25 driver said lookout at 620 head. Saw fire at 620 head and tail end. Most smoke at Head end. Wind blew hard. 1130 hose up DR25 with [redacted]

15. [redacted] – Driver of DR10 with [redacted]

Went to DR11 to position DR11 for maintenance. Left DR 11 by 0930. Nearly up top. Heard fire alert at poss 1000. put on lights. Possibly half hour after got call, all available personnel to assist at DR11. Went to tail end of 620.

16. [redacted] – Electrician and Apprentice

620 conveyor. Fitting new boxes at head end of 620. Belle Baine getting permit. Stopped conveyor work because of conflict with other work. DR11 thruster routines but moving DR 11 back after brew approx 1000 – 1010. 1120 to 1130 back to office. Saw smoke from cut in vehicle. Heard call for assistance. Went to 720 tail end and fire until night.

17. [redacted] – Mechanical maintenance – rigger scaffolder

Going to work on conveyor 620 on idlers. Went to superannuation presentation. Looked across mine while fueling up. Saw 3 separate fires. One towards tail end. Two and three the mid section of conveyor. Reported to [redacted] he was not aware. Went to tail end of 620. Super presentation finished approx 1120. Not on coal that morning until after seen fire.

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18. [redacted] – Fitter

Inside pipe work on 620. DR11 and 620. Checked idlers to do. ½ hour on face conveyor then get new idlers up top then they went to have brew at 1000. Then super meeting. Finished at 1100 approx with [redacted]. No others on 620 in morning. Idler is on 620. [redacted] Fire service apprentice. Fighting fire in tail end box before fire on road way. Idler bearing at 157 conveyor unit damaged right where the belt was cut to replace.

19. [redacted] - Mike operator Band 3

In on extra . DR10 Hopper 1110 -1115 relieved. Hardly see DR10. First heard from [redacted] on portable to go to DR11. Head of 620. Entered tail of 640. Couldn't see anything with [redacted] and RTL tankers.

20. [redacted] – Maintenance – Supervisor

Still in office in meetings. 1030 to 1045 called by his crews. Looked out window see smoke at head and tail end.

21. [redacted] looks after Ops group and services
6.15 start shift. Reinforced fire service policy to all subordinates. 8.30 – 9.00 left for Melbourne. Called [redacted] re windy on way to Melbourne.

22. [redacted] - Fitter and Turner

Start day at DR9. Super meeting. [redacted] spoke to [redacted] at shed. Called to DR11. Saw three fires along tail. ½ doz fires big as room around tail end. Spotting everywhere. Arrived 5-10 mins after [redacted] Acknowledged photo with [redacted] at tail box area.

23. [redacted] – Fitter

DR9 [redacted] said 620 on fire and left. [redacted] said going to head end. [redacted] went to tail. ½ reasonable fire in middle on flat. Big whirl winds with fire. A lot of fire. Couple at 620 tail end when got there.

24. [redacted] - Crane Driver

Doing cutters and bucket wheel maintenance. Not in mine in morning. Got there at 11.15 to tail box. Fire 5-10 others there first.

25. [redacted] – Fitter

With [redacted] and Apprentice at Coal Bunker. Fought fire at DR11.

26. [redacted] - Supervisor Alstrom Mine Maintenance

Gave job to crew to pads at DR11. Crew called in DR11 off pad. Stayed with [redacted] when crew went to brew at 1000. Crew met with [redacted] stopped work. Riggers took pads into mine on sherritt. [redacted] took to DR11. Picked up old pads at north end of mine

27. [redacted] – Rigger

With Vic on DR11. Waited for DR11 to move. Went to another job – had brew. Found out about fire – saw smoke from workshop. Didn't enter mine at all.

28. [redacted] – Fitter

In store when told of fire. Went to DR11. Then went to tail. Not in mine in morning.

29. [redacted] – Crane Driver

Loaded pads at store. Showed truck driver to DR11. Super meeting. Moved pad off coal. Vehicle moved from tail end along 620. Hazelwood power vehicle. Pads truck at 9.15 to DR11.

30. [redacted] – Rigger Scaffold

With [redacted]. Noticed a fire size of a person behind dredge. Called out via crane. Saw smoke up other end of 620.

31. [redacted] - Electrician

To DR11 at AM for lighting work, never did any work due to repositioning. Went to meeting for rostered days off. Told not to go to mine due to fire alert. After lunch went patrolling at 760-780.

32. [redacted] – Supervisor for Belle Banne

Had to work on groove pulley on DR11 on discharge boom. Wait for DR11 to be moved onto PAD. At workshed at 0900. After Brew called to fight fire went to 820 tail worked up to DR 10 and to 720 at DR9. Photos at 1725 onwards.

33. [redacted] - Boiler Belt worker

To DR11 at 620. Brew at 9.30. Noticed fire at 1140 fire at head of 620 and ¾ way down.

34. [redacted] Belt worker

DR11 pulley regroove to 820 to Firefight.

35. [redacted] – Belt worker Belle Banne

7.15 start. On site at 6.20 at 7.30 – 7.45. Ops turn off conveyor. Road runners turned off at 0800. Went and worked in rises. Saw fire going at 2 ends. Head and tail. Fire fight at 820 after lunch. No belt work on 620 as work permit not issued. Was promised at 1000 but fire alert put on.

36. [redacted] – Belt worker

Same as [redacted]. 11.30 saw smoke at tail and head of 620. In morning stopped at head end unit. spun belt to get dry area to inspect. 7.30-7.45 M.Pike will know if lock out occurred.

37. [redacted] - Vulcaniser Belt worker

to 620 conveyor to do belt inspections. Got ops to position the belt at 0800. Spays were on. Belt wet. No to turning off sprays. [redacted] lid sprays off after 1000. Ops to take off hopper from conveyor – Brew. Told sprays on no belt checks. After lunch sent to 820 for fire fighting. Ran the belt 300m and locked out belt.

38. [redacted] – Civil Engineer

Long term planner of fire systems. Pegging out pipe alignment in mine. 10-11.30. Tail end of 720 on clay ramp then head end of 820. Noticed fire at 11.30. No radio.

39. [redacted] – Mine Surveyor

Looks after digging controls. Starts at 0730. Goes to each machine in morning. Sets up lines and levels. DR11-Did drive past at 0830 being moved onto pad. Back for brew. All sprays on. Went out took photo at north photo of dusk at 11.15. 11.45 took after hearing there was a fire at 620.

40. [redacted] – Senior Surveyor - ESLO on day of fire

In charge at time of fire. At 1015 noticed Red light at Ctl Centre. Called fire service to check all people knew. Called [redacted] d RTL. Made way to DR11. Saw Auto Electrician working on Dozer at DR11. Sent him off at 1030. Thought maintenance people working there. Called at 11.30 told of fire. Travelled with [redacted] saw fire on 620. Called [redacted] Dropped off [redacted] at DR11. Started up at IC point. Weather – stable in morning. Sprays on early 9am or before. Wind blew up. [redacted] Fire Service Supervisor. Spotter – [redacted] Supervisor is [redacted]

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41. [redacted]

Left work at 0800. Back at just before 1100. Noticed smoke at tail end. First only. 'Fair Goer'. Called [redacted] to organise CFA from [redacted]. 620 sprays were not working on auto. 'East of conveyor'.

42. [redacted] – RTL

Sand tracks for cables. Tail end 820 approx 1km east. Saw 2 smoke plumes. Fair way apart. Strong wind. Could not see 620 tail end. With [redacted] Called fire services got 50t water cart. Most likely 1st on foot to tail end. Got hoses first. Told to go to head end. In way there told to go to tail end.

43. [redacted] – Plant operator RTL

Sand on cable run at 820. Very hot day. Went to call. Fire service at 620. Said they would look into it. Took 50t to 620 then DR11. Rang Morwell Fire Station direct. Could see tailbox. Fire was on batter spreading quicker than could drive 50t.

44. [redacted] – RTL

Above 520 doing surcharge digging OB. Saw smoke coming from tail end. After lunch took 40t dumpers used as water carts. Unsure of brew time before or after fire. With [redacted] and [redacted]

45. [redacted] – Worked on ramp at tail of 520.

Fire in centre of formation. 150mts from tail end. 200-300mts further up. No sprays visible on 620. Holidays – Apprentice boiler maker running hoses out of tailbox. Tailbox post burning and coal around tailbox. East side at tailbox of 620 on fire. Fire at north end on east side of 620 between conveyor and pipe works.

46. [redacted] – on ramp at tail of 520.

Told of fire at tail of 620. Poss 1000 after smoke.

47. [redacted] – Apprentice boiler maker

Turning on sprays. Took phone call when at ponds. On way to brew room. Think brew was on fire poss 0930. Went straight to tail end.

48. [redacted] – RTL Leading hand. On day Acting Supervisor

Called at 9.45 Fire Alert. Called at 11.30 – 11.45 fire – tailend 620 from Fire Service or [redacted] After water carts. Top side sprays turned on near tailend.

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49. [redacted] – Grader driver

Working at 690. Then after brew drove to new ramp at 520. Heard fire alert while on Perimeter Road. First knew of fire was radio. Saw smoke at 620 tail end. Wind strong enough to raise dust off ash pond behind power station. Work with paddy.

50. [redacted] - Plant Operator

On truck after brew above 520 working on River Surcharge. After lunch sent to move water for fire. Heard on radio needed 50t ers. First sign of fire.

51. [redacted] – Plant Operator

Above 520 in clay pit. Heard on radio. After dinner sent in to help.

52. [redacted] – Work for Victorian Marine Services

Working on dredge in dirty water pond. East most pond. Not sheltered. Windy in at Ponds.

53. [redacted] – Dump truck driver

Working on surcharge. Saw smoke. Worked until lunch. After lunch sent to fire.

54. [redacted] – RTL Plant Operator Excavator

Working on OB. New DR25. Brew at 0930. Heard on radio. No sight. Normal lunch break.

55. [redacted] RTL

Water cart. Called Benz Water Cart on Nth Batters over Hazelwood Radio to go to 620. Heard on fire. Called fire service to report. Tail on fire too. Worked Nth batters.

56. [redacted] – RTL Truck Driver

Tail of 520 ramp. Brew 1150 heard call for water carts. Saw smoke from 620 tail end. Put on fire truck at lunch time.

57. [redacted] – Leading Hand/Plant Op

Excavator at 520 head bottom side. Saw small fire at tail end. Called fire service. After 1100 saw smoke away from batter.

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58. [redacted] - Truck driver

Working clay ramp 520. After brew [redacted] told him to get water cart from yard. Went to 620 tail. [redacted] at tail when O/S. Fire moved very fast. At Morwell since 78. Not seen one move so fast.

59. [redacted] - RTL Service Truck Driver

At 720 after smoke 9.45. Head end. At ramp for 520. When [redacted] got [redacted] to get W/C.

60. [redacted] Alstrom Fitter

Change pads at DR11. Went to get permit at 815. Got DR11 moved. Told to come back after brew. Rdo meeting until 10.30ish. Superviser advised no work due to fire alert. 11.15hrs called to go to DR11 with hoses. Went to 520 tail end.

61. [redacted] - Boiler Maker Alstrom

DR11 to repair ground on crawler 11. Travel drive. DR11 not ready went to geo workshop. 0810. Back for Brew. Back to Geo. FF at DR11. Went up top with [redacted]. Turned on 540,640,740 sprays on way to 520 Head.

62. [redacted] - Bilfinger Berger Services Supervisor

1000 [redacted] called fire alert. Driving along bottom of mine 10.30-1100. 50-60mts apart at 300mts. Went to 620 tail end. 4 or 5 at 620 later in the day.

63. [redacted] - Contract Driver

7 years working for mines. 0915hrs into mine gates to DR11 to unloaded pads. Then at tail day before. Went from DR11 to tail end. Went out over clay roads. 45mins to unload at DR11. 1hr at tail on Nth batter road. East of 620 tail. Wind blowing at 620 whole time. Followed tracks out across 620. One wet spot mid way along in middle of flat. [redacted] Alstrom was at DR11. Had to drive through wet spot but picked driest run.

Photographic Timeline.

Approx 10:30
12/10/2006

The above image was taken by an unknown person, the image was presented to the CFA investigators to show the mine's fire sprays were operating prior to the fire. The caption on the image states it was taken at approximately 1030 hours on the 12/10/2006, however the time stamp is for 1150 hours on the 12/10/2006. The truck located in the middle of this photo belongs to [redacted] a local transport contractor. His gate pass recorded that he entered the mine at 0910 hours and left at 1115 hours. Discussions held with [redacted] revealed that it took him 30 minutes to exit the mine to the gatehouse. He stated that he took approximately 1 hour to load at the location in the picture. The possible timeframe for the capture of this image is between 1015 and 1045 hours, however closer inspection of the photo shows [redacted] truck is loaded. This would make the likely time probably **1030 to 1045 Hours.**
This image was taken from the south end of the mine and shows the tail end of levels M620 on the left at the top through to level M820 on the far right. This photo shows that not all sprays were operating, and that the sprays at the tail end of M620 were turned off. Close inspection of this image shows no sign of fire in the mine.

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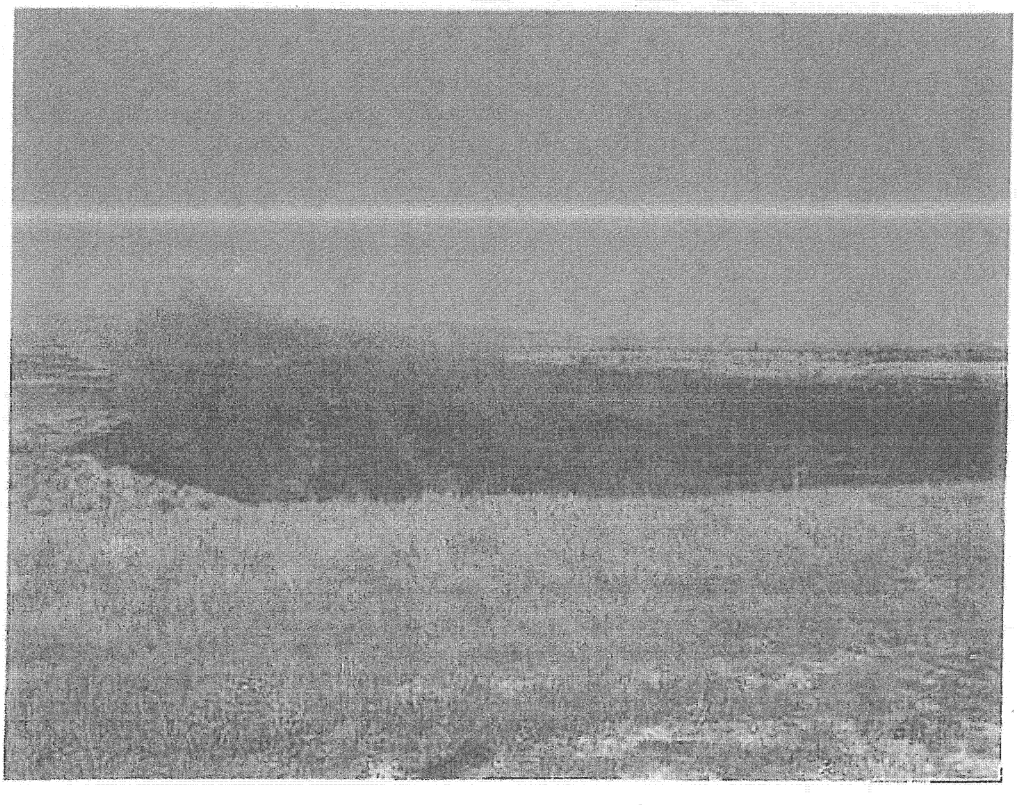

The above photo was taken by [redacted] a Mine Surveyor. It was taken from the northern side of the mine looking south. The time stamp on the camera was 1213 Hrs on the 12/10/2006. Inspection of [redacted] camera revealed the time stamp is approximately 50 minutes fast, the actual time of this image is **1123hours**. Batter and formation M620 is visible in the right of the picture, the sprays to the right of the image are operating on M620. The heads of all of the conveyors are not visible due to raised dust. From the left of the picture, Dredgers 10 and 9 are visible. The Dredge on the far right is DR25, DR 11 is sited on the far end of M620, and it is not visible due to the amount of raised coal dust. The tail end of M620 is on the far right of this image and not in view, this shows the topside sprays operating and shows the limited coverage of the sprays due to the wind. As this image does not show the tail box, it is not possible to determine if there is an active fire at the time of the photo.

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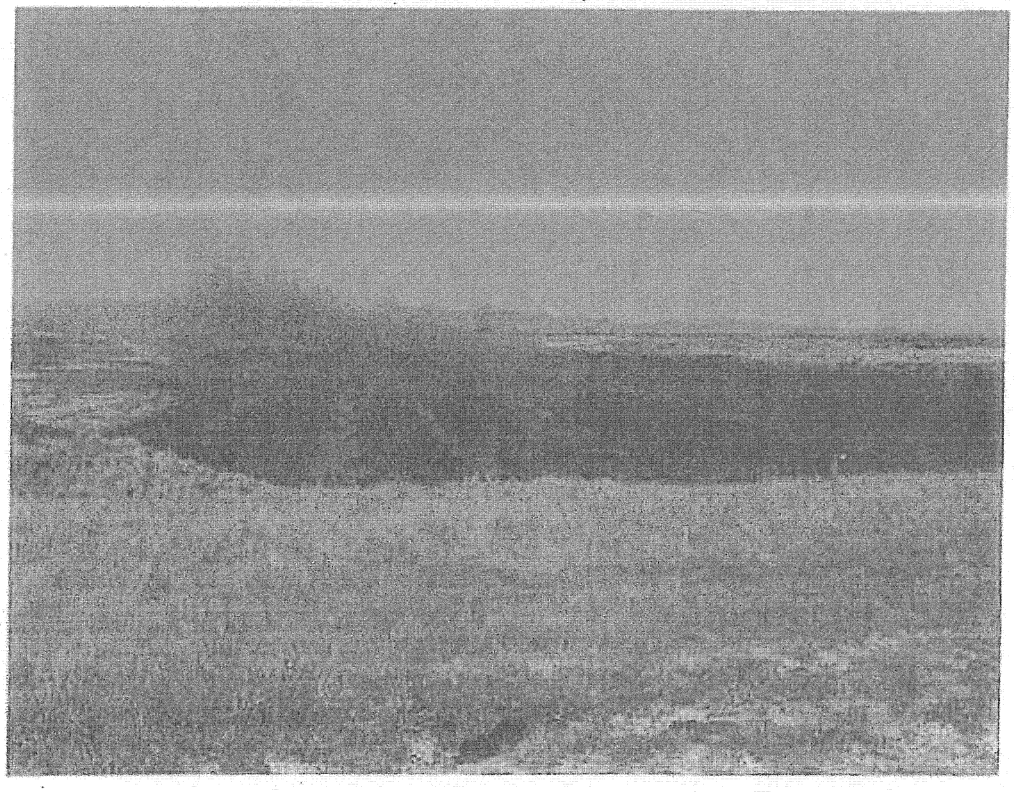

The above image is the second in a series of two taken by [redacted] from the northern end of the mine; it was taken shortly after the previous image.

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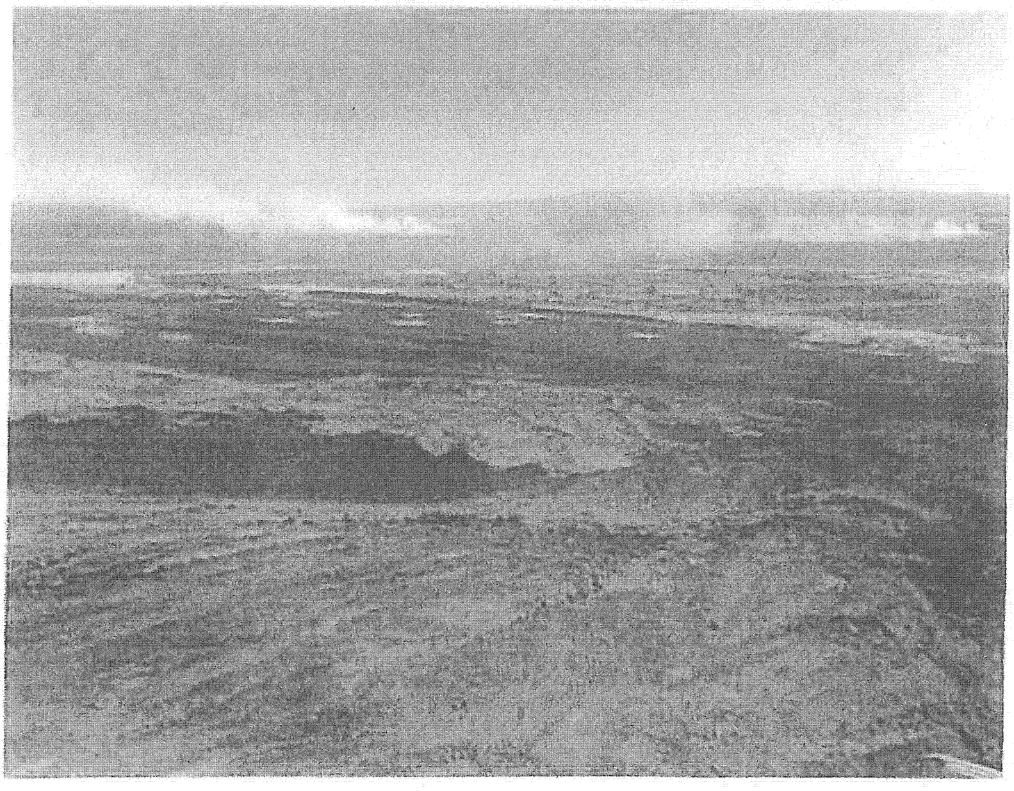

This image was captured by [redacted] n his mobile phone when he overheard a radio call for roadrunners and leading hands to attend a fire over the open channel. [redacted] was operating the TS2 Overburden Stacker on the south side of the mine, on hearing the call he slewed his machine around and took a series of photos. The first photo was recorded at **1149 hours**. This image is from the east looking at the fire on the M620 formation and batter. The tail end is to the right and the dredge is just visible through the smoke on the left side of the mine.

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This photo was taken by [redacted] at **1152 hours** as he traveled towards the head end of the mine. This photo was retaken by [redacted] to see if the 11DR and S94 would have been visible from this point. As you can see in the next photo they would have both been in the picture, but appear to have been obscured by smoke. They would have also had fire around them.

The direction of the smoke travel and lack of height in the smoke column indicates the wind was blowing from the north and with a reasonable strength.

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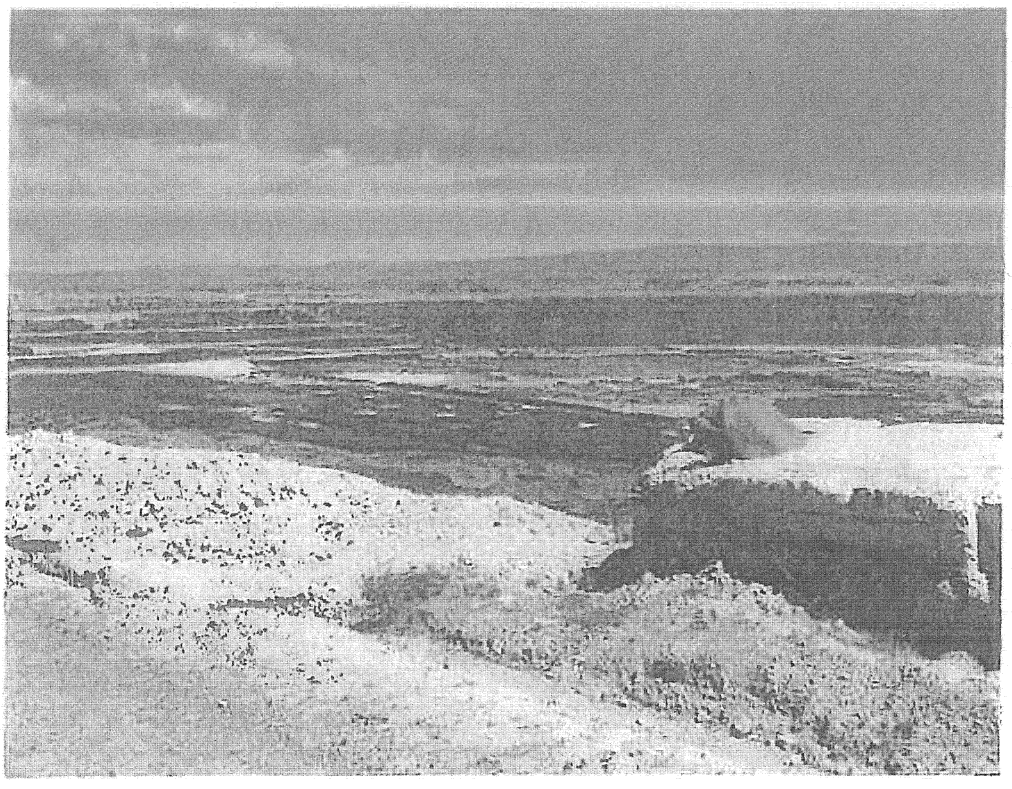

This photo shows the view of the 11DR and where S94 would have been. Taken by [redacted]

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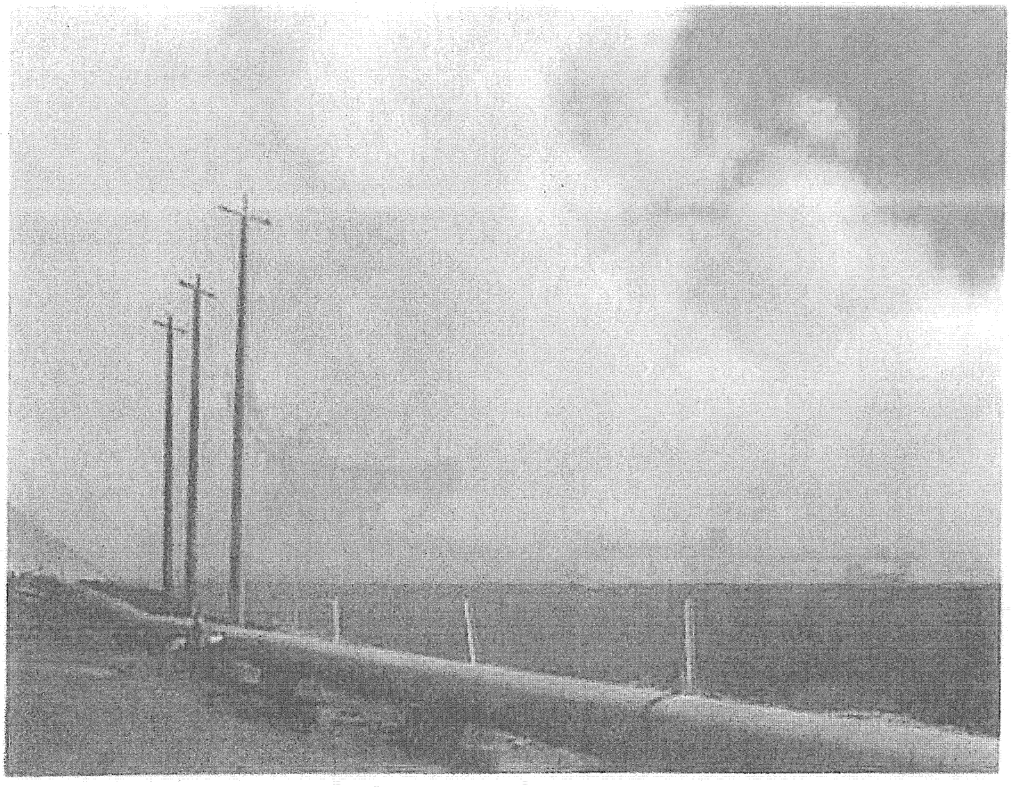

Photo taken by [redacted] while approaching the fire from the headend at 1229 hours. DR 11 and S94 both in view.

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Photo taken by [redacted] while approaching the fire from the headend at **1229 hours.**

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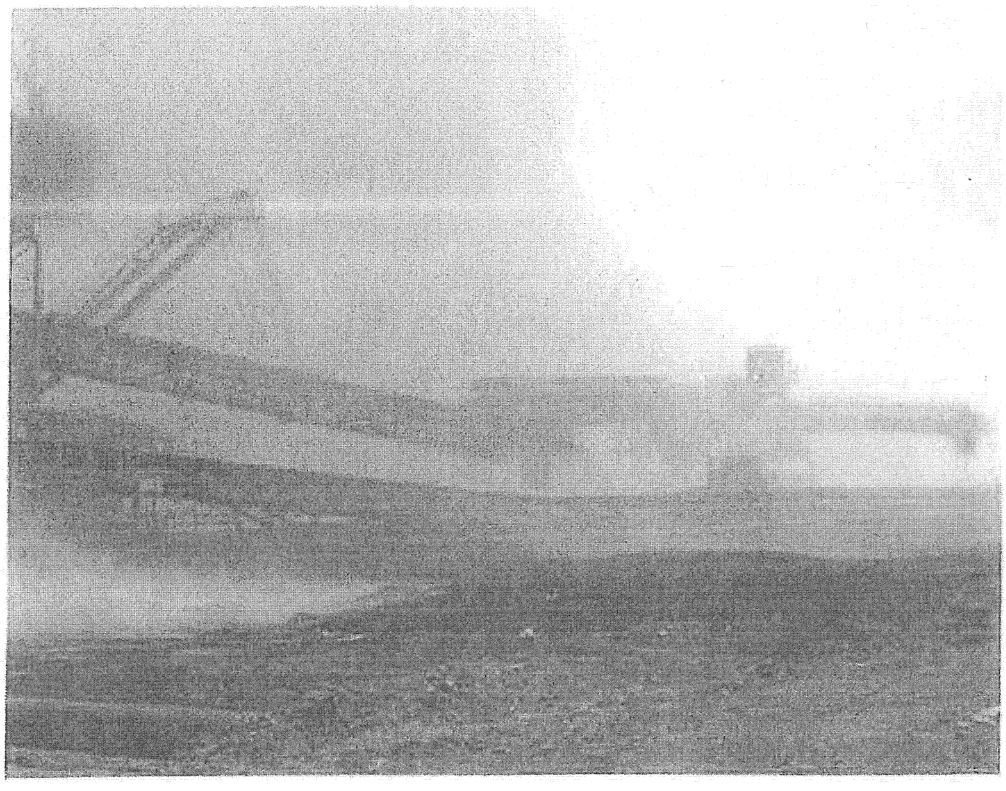

Photo taken by [redacted] while approaching the fire from the headend at **1229 hours.**

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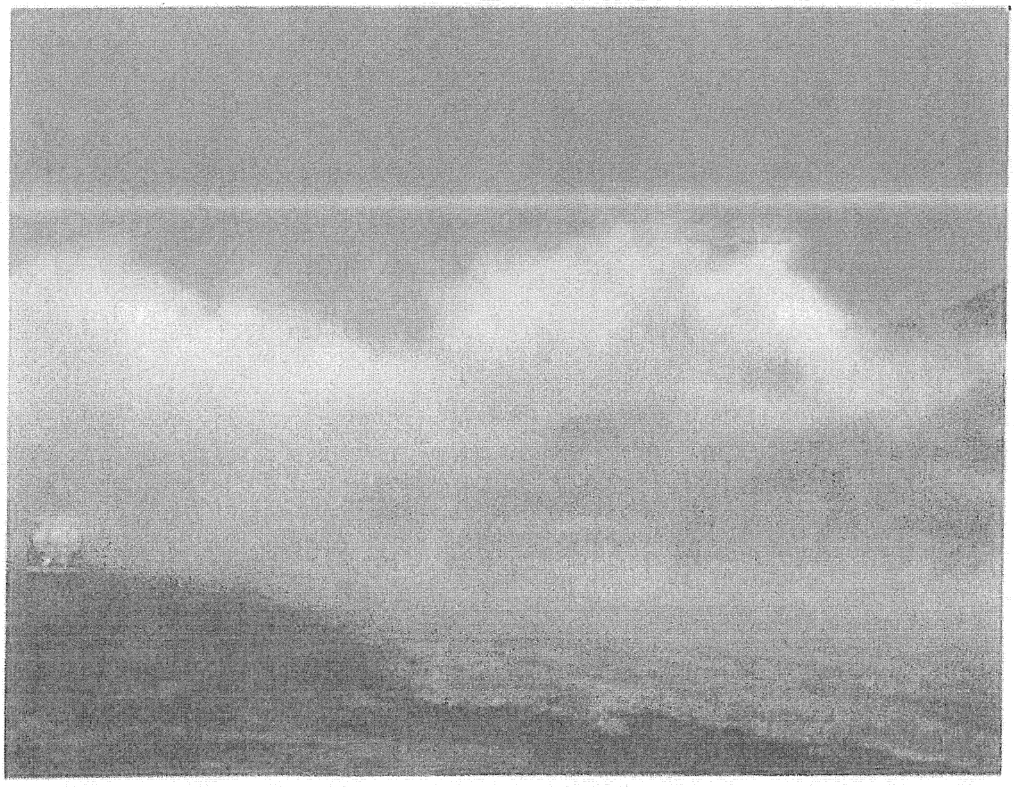

Photo taken by [redacted] D at 1235 hours from the tailend of M620. Note the batter is also now involved in fire.

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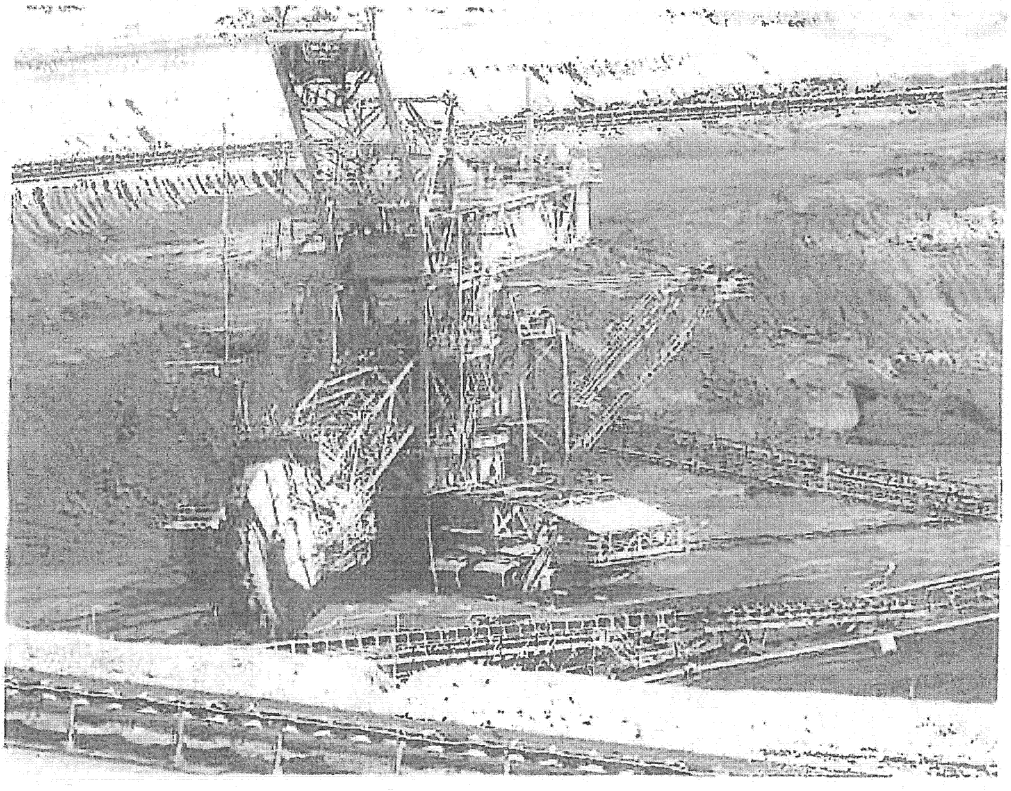
Post Fire, Fire Investigation Images.



Type: Digital.

Direction: North-West

Taken By: Fire Officer [redacted]

Description: Dredge 11, post fire.

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Type: Digital

Direction: West

Taken By: Fire Officer [redacted]

Description: Destroyed Bulldozer at head of M620.

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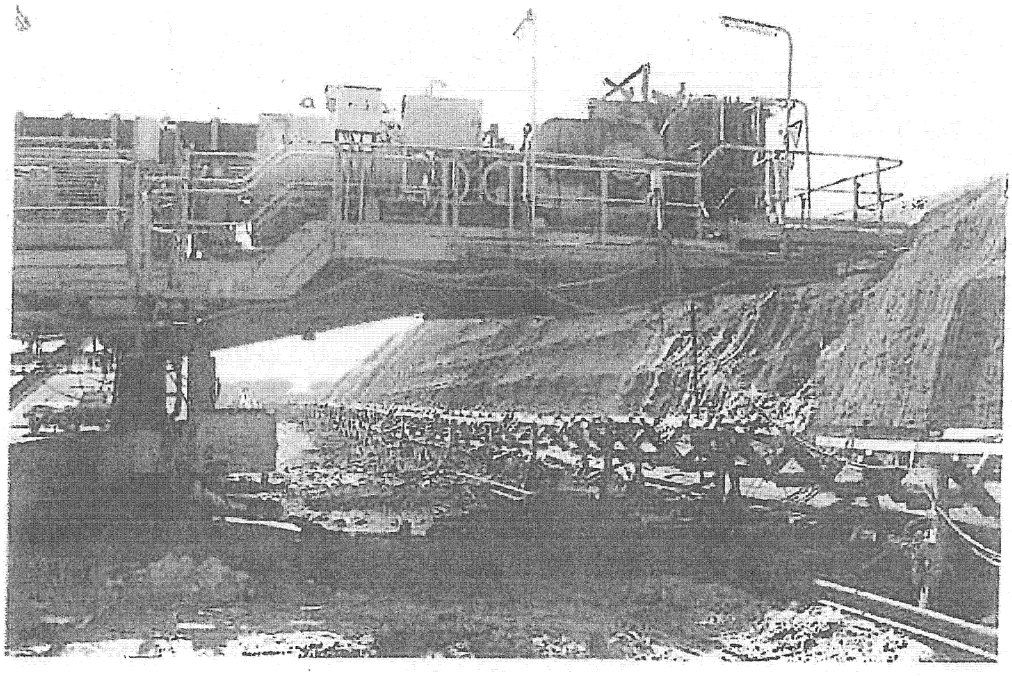

Type: Digital

Direction: East

Taken By: Fire Officer

Description: Destroyed head unit from the M620 conveyor and the M640 conveyor underneath it.

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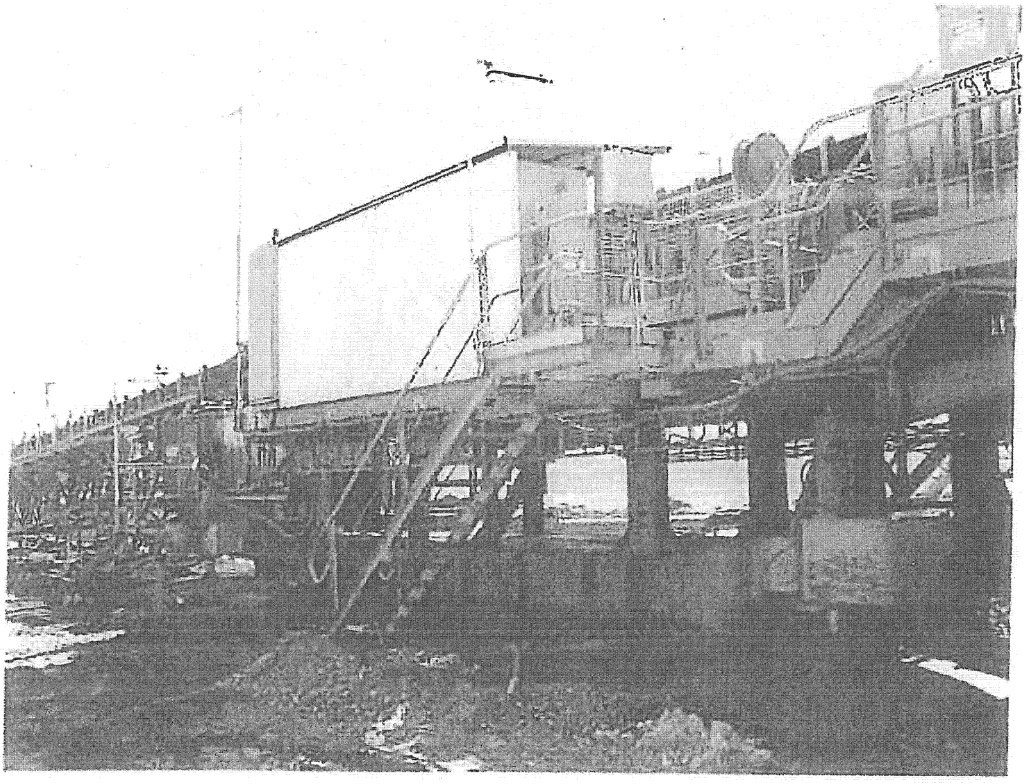

Type: Digital

Direction: North East

Taken By: Fire Officer [redacted]

Description: Destroyed head unit from the M620 conveyor.

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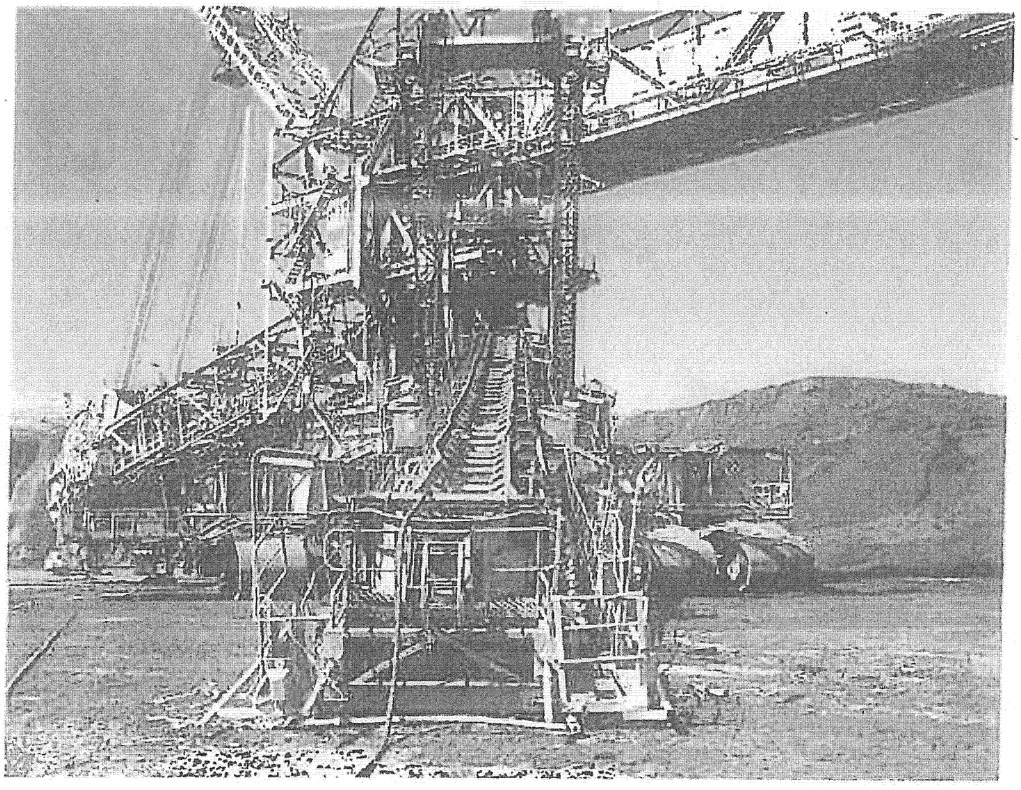

Type: Digital

Direction: South West

Taken By: Fire Officer [redacted]

Description: North end of the damaged DR 11. This photo shows the conveyor that exits the rear of the unit.

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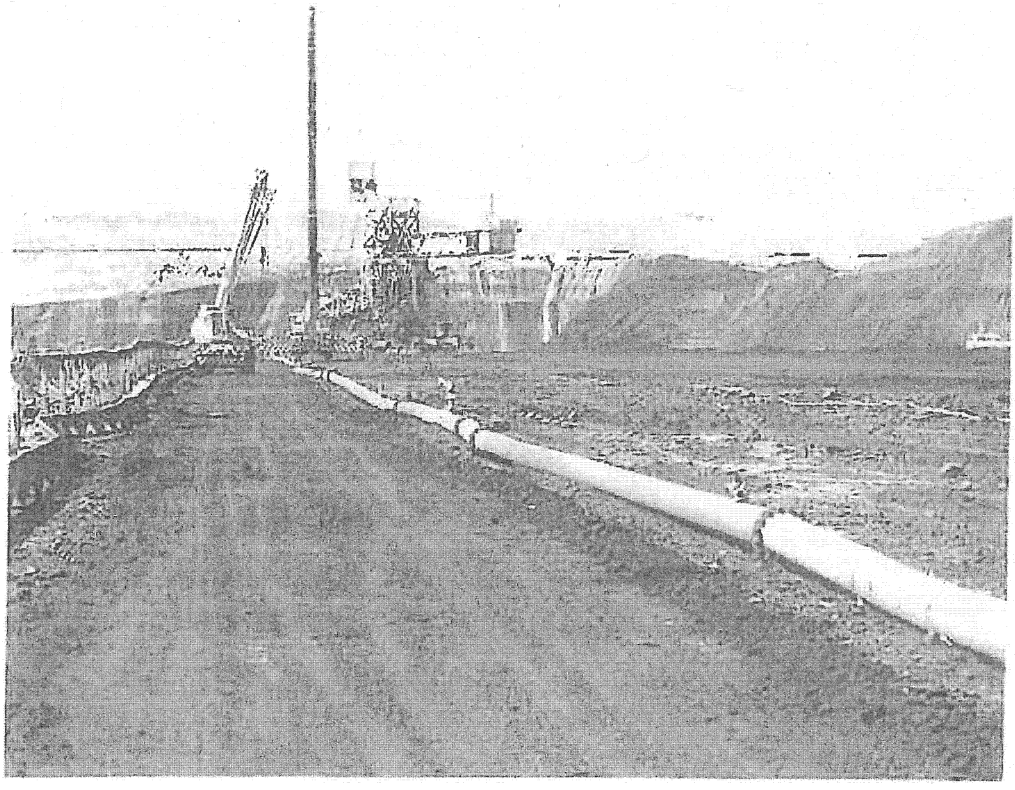

Type: Digital

Direction: South

Taken By: Fire Officer [redacted]

Description: View of the M620 profile and batter, repair work was underway prior to our arrival on site.

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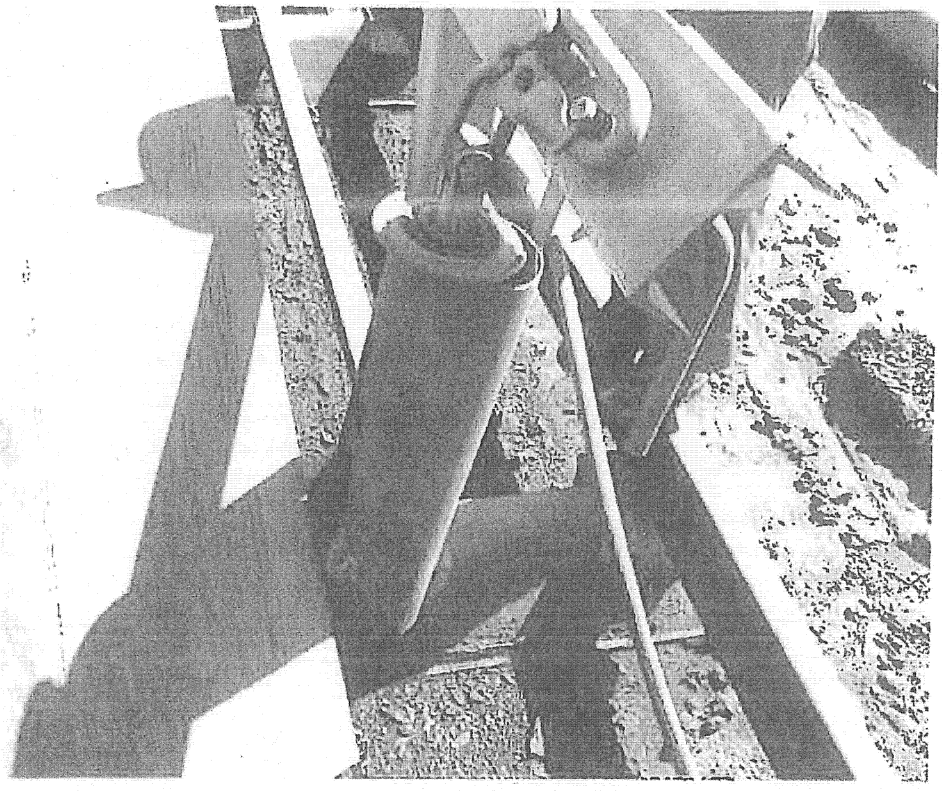

Type: Digital

Direction: South West

Taken By: Fire Officer [redacted]

Description: Damaged idler on conveyor unit # 157, 852 meters from the head of conveyor M620.

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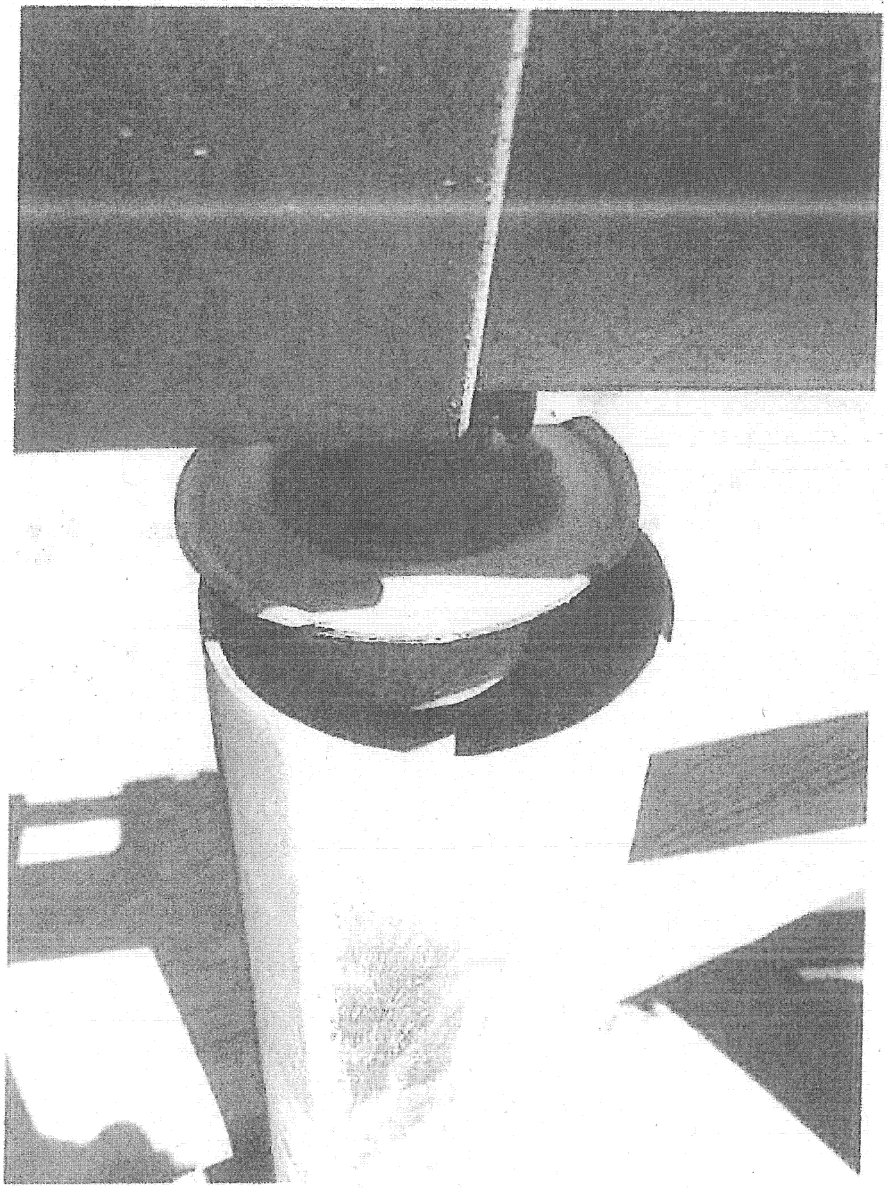

Type: Digital

Direction: South West

Taken By: Fire Officer [redacted]

Description: Damaged idler on conveyor unit # 157, 852 meters from the head of conveyor M620.

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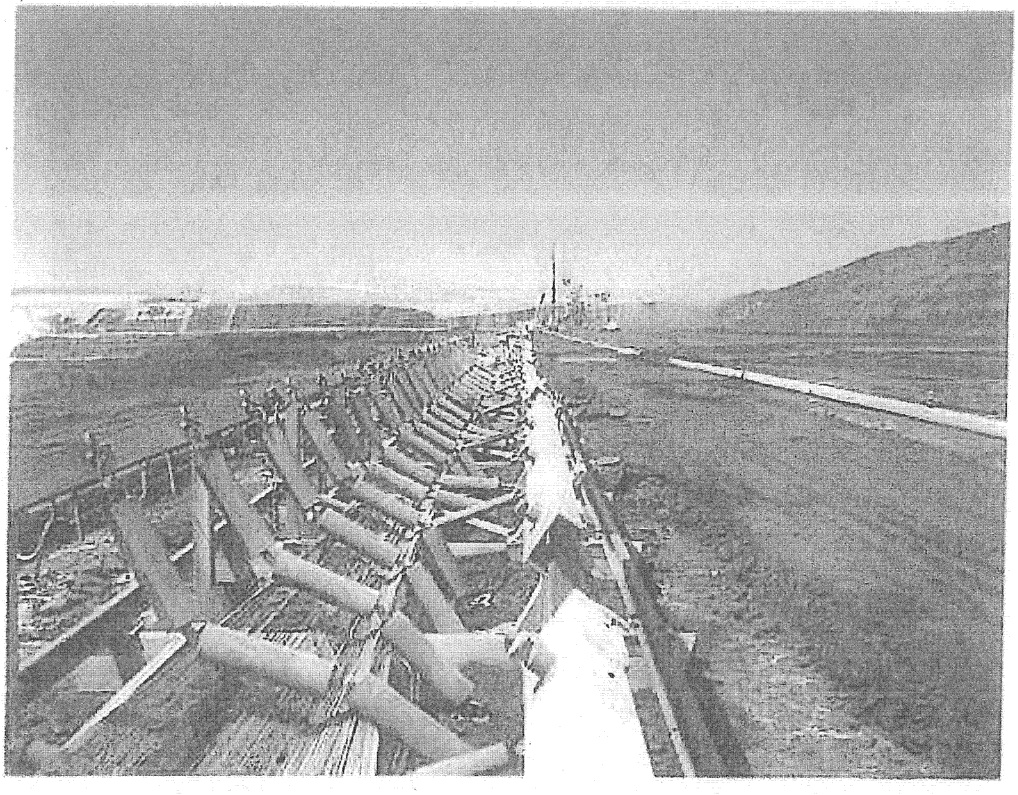

Type: Digital

Direction: South

Taken By: Fire Officer [redacted]

Description: View of the M620 conveyor, profile and batter, repair work was underway prior to our arrival on site. The feed belt had been removed and topside idlers already released. This picture was taken from the conveyor unit 157 with the damaged idler bearing.

Country Fire Authority
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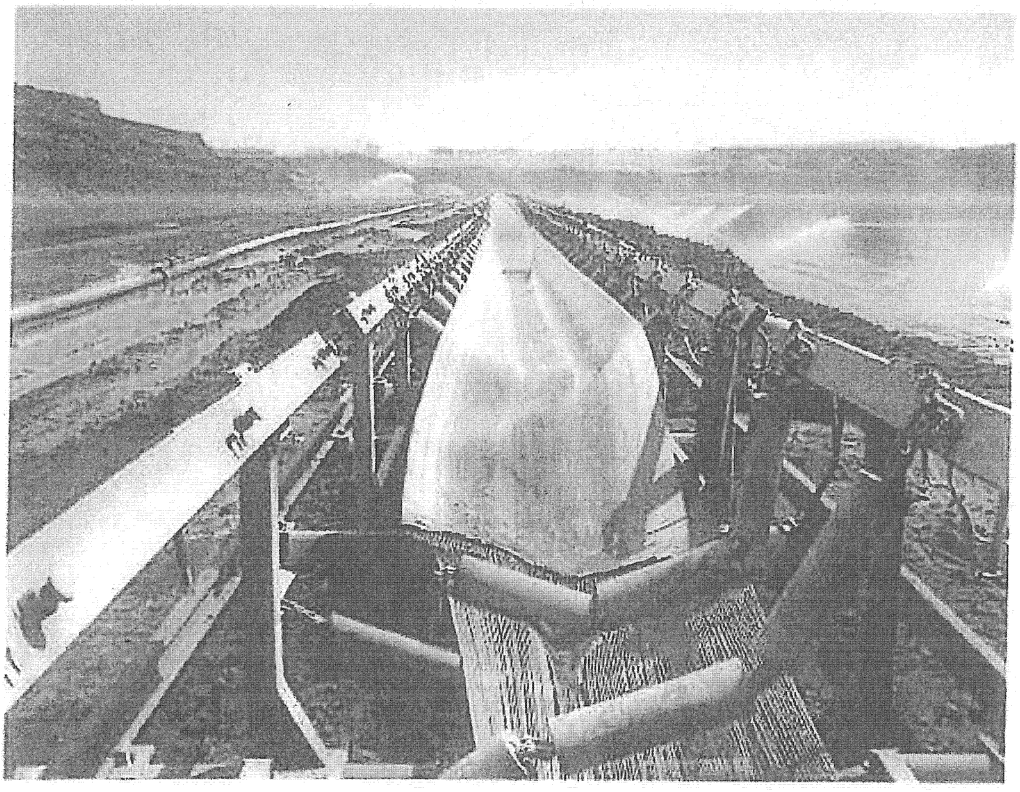

Type: Digital

Direction: North

Taken By: Fire Officer [redacted]

Description: View of the M620 conveyor, looking towards the tailend of the system. Note where the damaged belts finish, the third idler on the right hand side of the image is the damaged one.

Country Fire Authority
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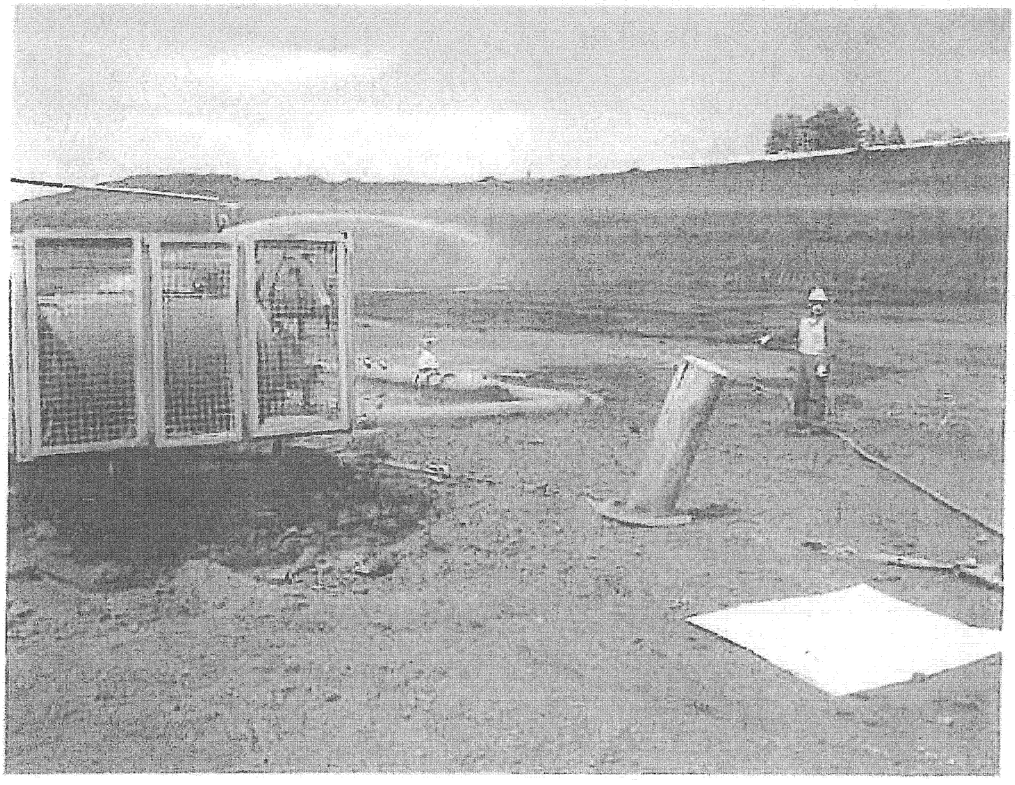

Type: Digital

Direction: West

Taken By: Fire Officer [redacted]

Description: The initial fire was also on the topside of the M620 conveyor when crews arrived. It was burning between the conveyor and the topside fire service pipe work, as pointed out by [redacted]

Country Fire Authority
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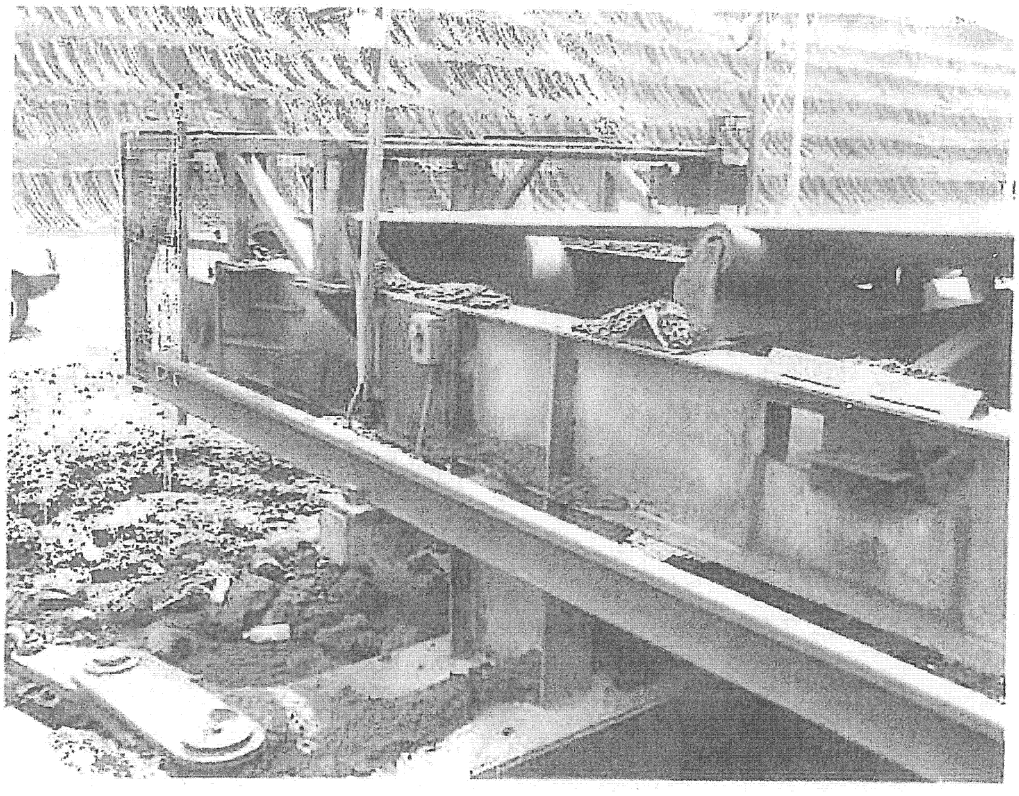

Type: Digital

Direction: North-East

Taken By: Fire Officer [redacted]

Description: Tailbox of conveyor M620, note the coal build up on the unit. The fire was in the vicinity of this unit when the first crews arrived.

Country Fire Authority
Fire Investigation Report
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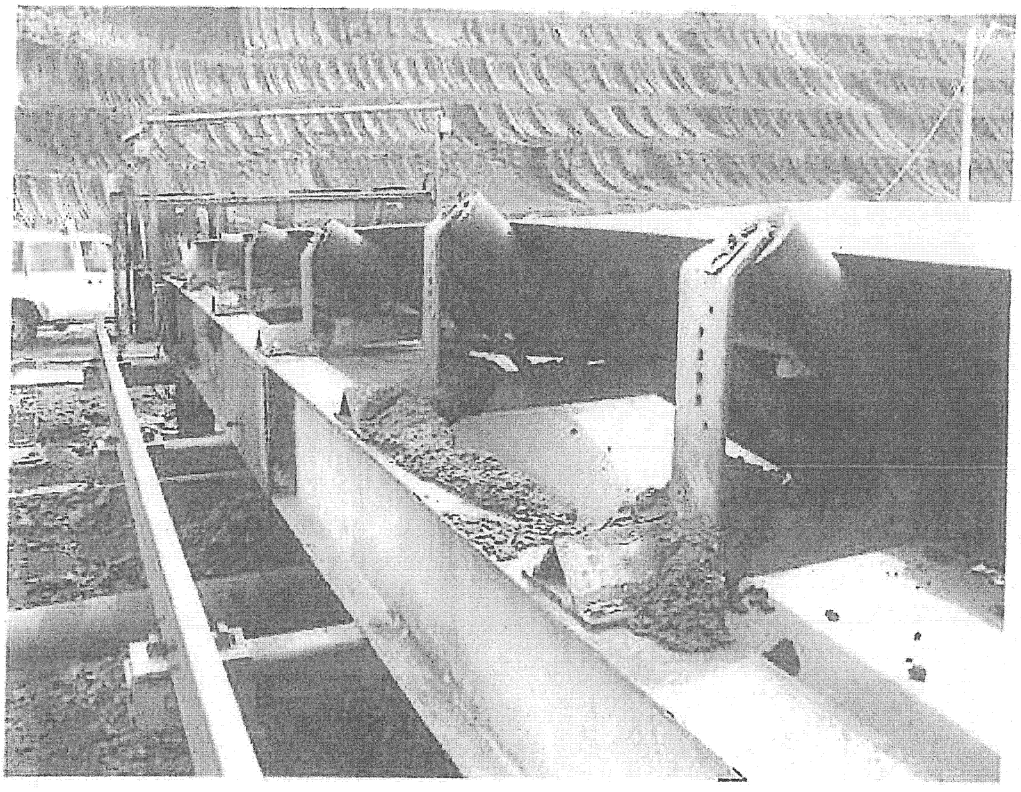


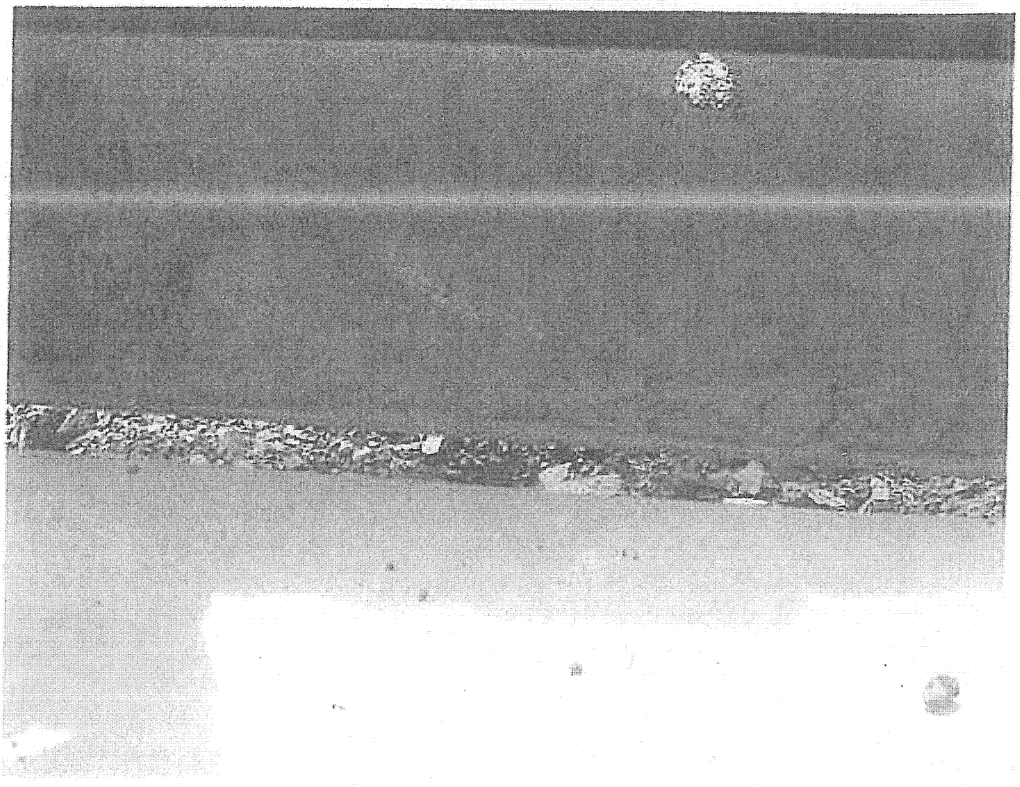
Type: Digital

Direction: North-East

Taken By: Fire Officer [redacted]

Description: Tailbox of conveyor M620, note the coal build up on the unit.

Country Fire Authority
Fire Investigation Report
Fire & Incident Reporting System (FIRS) Number: 1074299



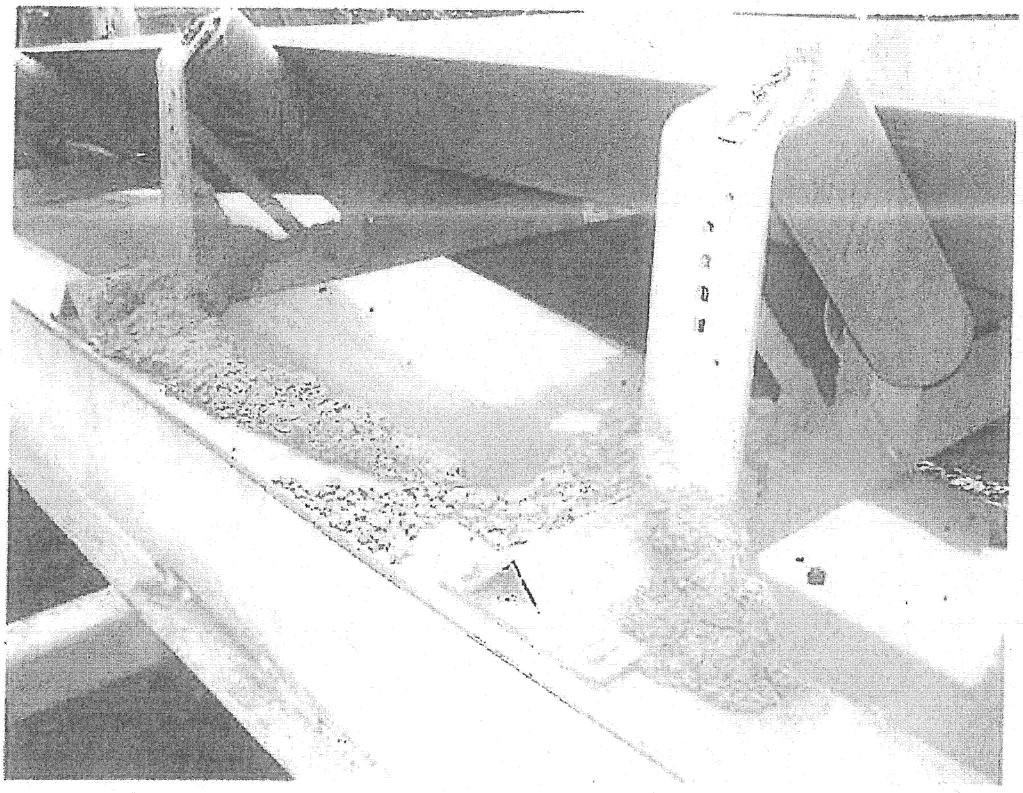
Type: Digital

Direction: East

Taken By: Fire Officer [redacted]

Description: Tailbox of conveyor M620, note the coal build up on the unit.

Country Fire Authority
Fire Investigation Report
Fire & Incident Reporting System (FIRS) Number: 1074299



Type: Digital

Direction: North

Taken By: Fire Officer [redacted]

Description: Tailbox of conveyor M620, note the coal build up on the unit.

Country Fire Authority
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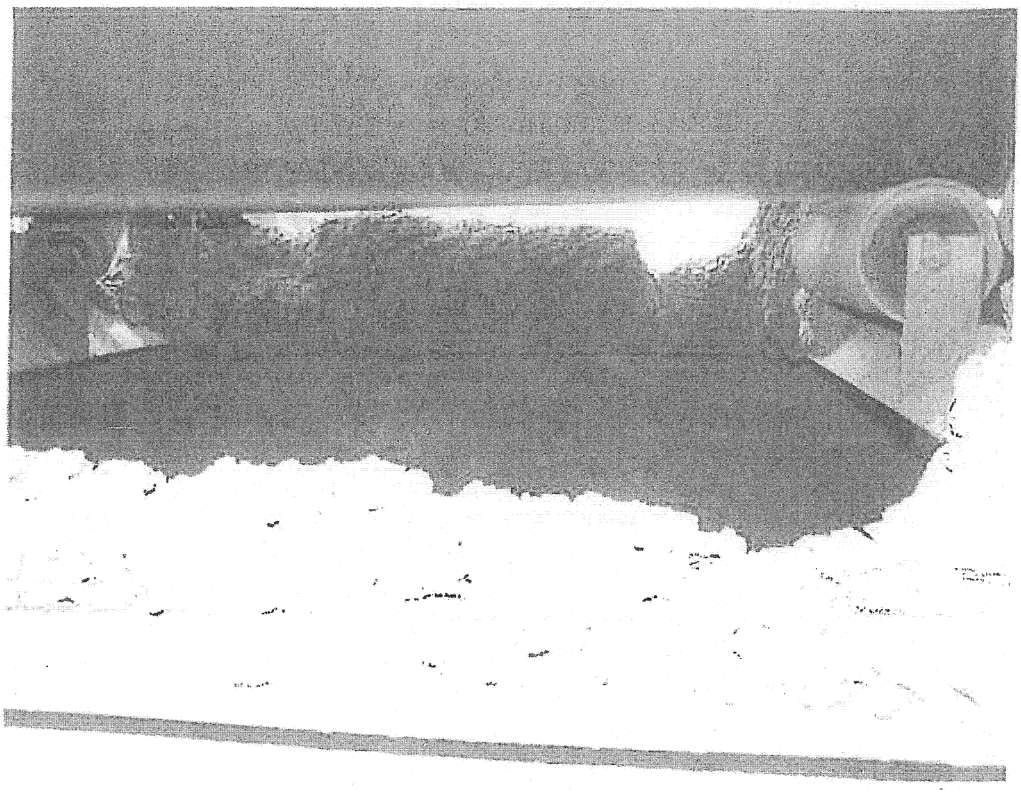

Type: Digital

Direction: North-East

Taken By: Fire Officer [redacted]

Description: Tailbox of conveyor M620, note the coal build up on the unit.

Country Fire Authority
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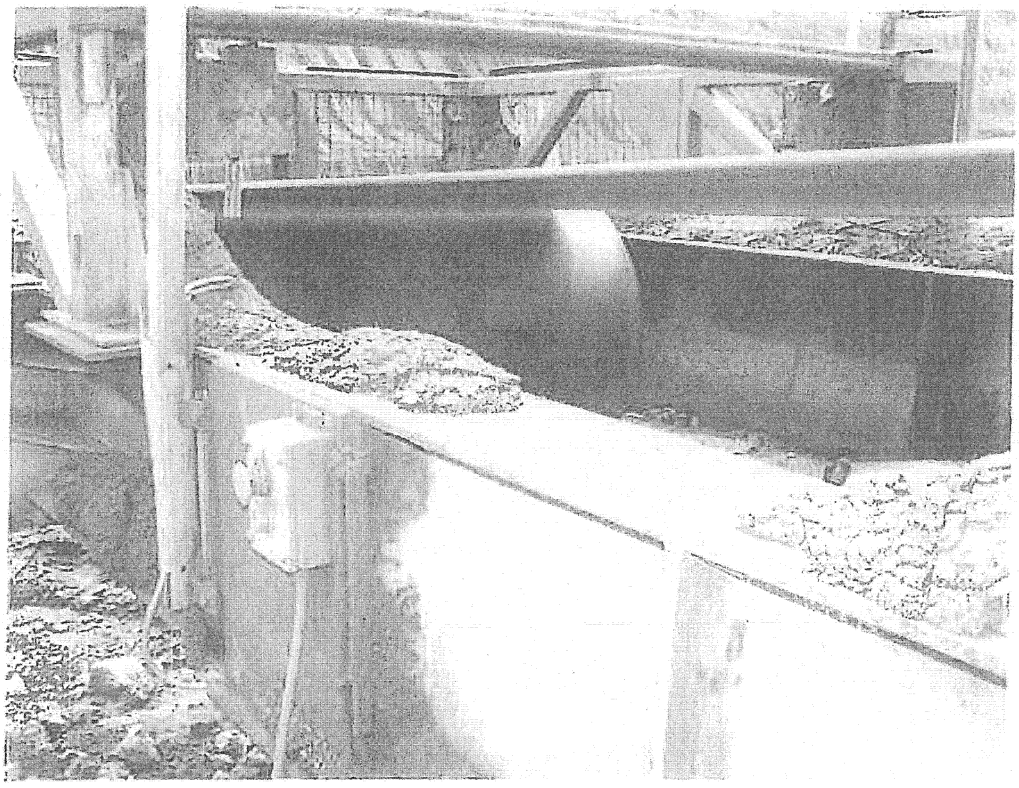

Type: Digital

Direction: North-East

Taken By: Fire Officer [redacted]

Description: Tailbox of conveyor M620, note the coal build up on the unit.

Country Fire Authority
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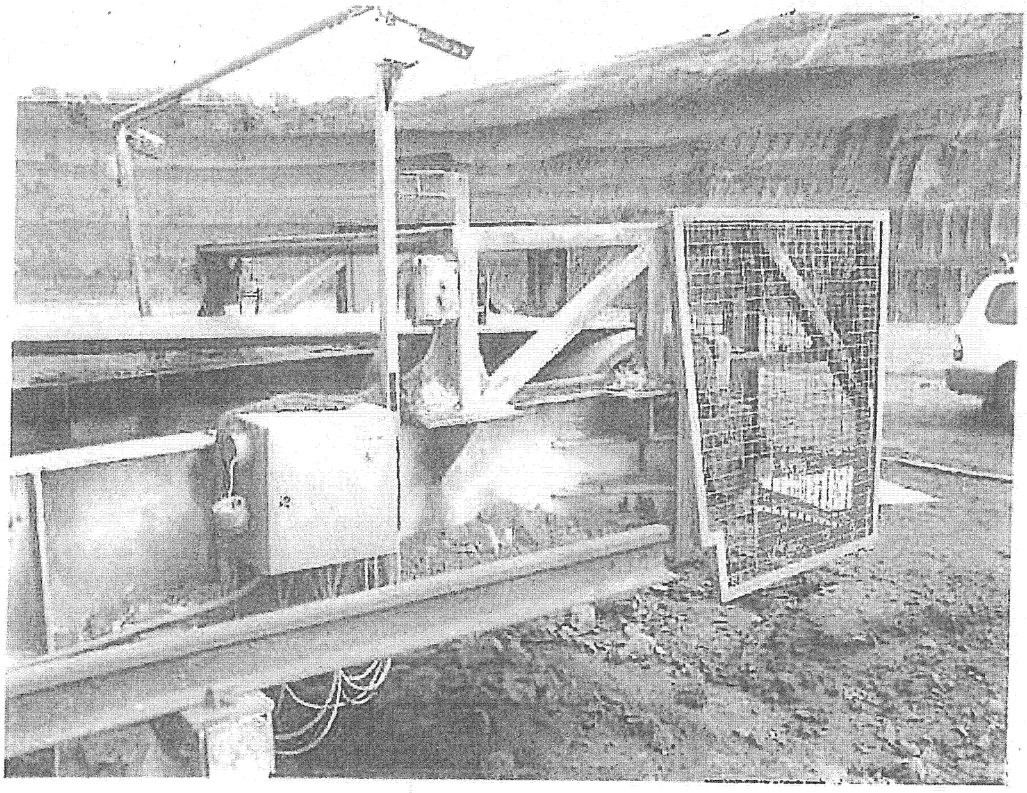

Type: Digital

Direction: North-West

Taken By: Fire Officer[redacted]

Description: Tailbox of conveyor M620, note the coal build up on the unit.

Country Fire Authority
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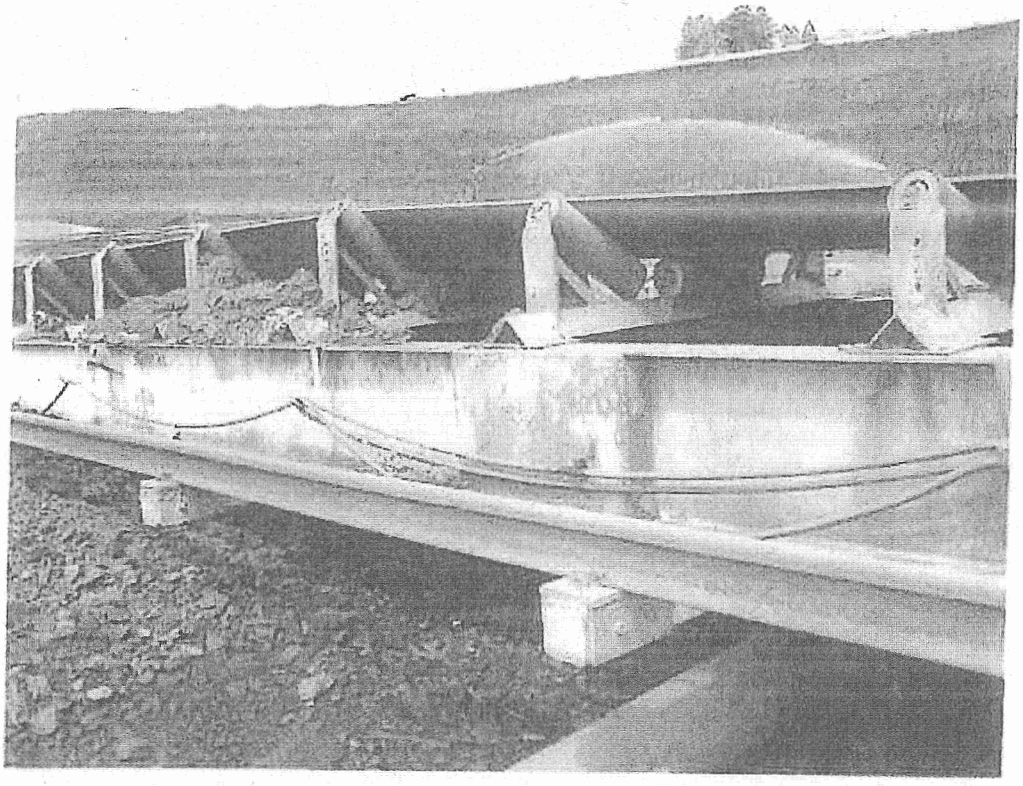
Fire & Incident Reporting System (FIRS) Number: 1074299



Type: Digital

Direction: West

Taken By: Fire Officer [redacted]

Description: Tailbox of conveyor M620, note the coal build up on the unit. The fire was in the vicinity of this unit when the first crews arrived.

Country Fire Authority
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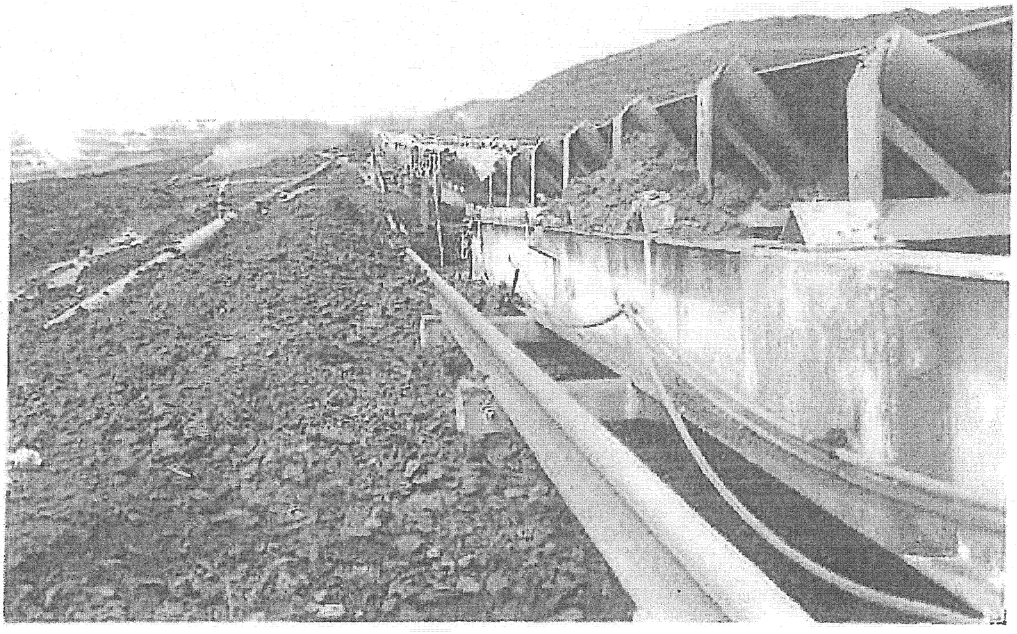

Type: Digital

Direction: South

Taken By: Fire Officer [redacted]

Description: Tailbox of M620 looking towards the head.(south) There was loose coal on fire on this side of the conveyor when crews arrived. Once again note the build up of coal debris on the plant.

Country Fire Authority
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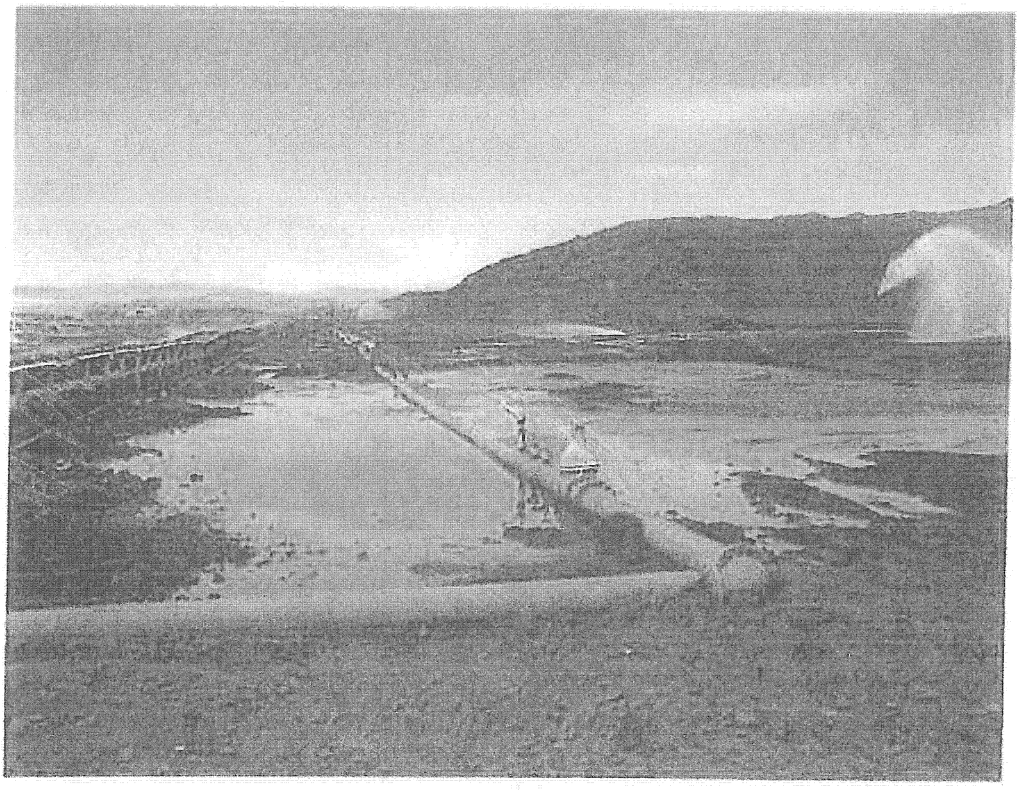

Type: Digital

Direction: South

Taken By: Fire Officer [redacted]

Description: The initial fire was also on the topside of the M620 conveyor when crews arrived. It was burning between the conveyor and the topside fire service pipe work.

Country Fire Authority
Fire Investigation Report
Fire & Incident Reporting System (FIRS) Number: 1074299

Incident Signoff Details

Investigator: [redacted]

Investigator Employee Number: [redacted]

Date Signed Off: 21/12/2006

Signature: [redacted]

Investigator: [redacted]

Investigator Employee Number: [redacted]

Date Signed Off: 16/01/2006

Signature: [redacted]

RFIC: [redacted]

RFIC Employee Number: [redacted]

Region: 10

Date Received: 29/01/07

Date Signed Off: 01/02/07

SFIC: [redacted]

SFIC Employee Number: [redacted]

Date Received: 13/02/2007

Date Signed Off: 13/02/2007