

**WORKER CRUSHED BY
OILWELL PUMPJACK
ROTATING COUNTERWEIGHT**

Type of Incident: Fatality

Date of Incident: November 25, 2011

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SECTION 1.0 DATE AND TIME OF INCIDENT

1.1 The workplace fatality occurred November 25, 2011 at approximately 2:30 p.m.

SECTION 2.0 NAME AND ADDRESS OF PRINCIPAL PARTIES

2.1 Owner(s)

2.1.1 Penn West Petroleum Ltd.
200, 207-9 Avenue SW
Calgary, AB
T2P 1K3

2.2 Prime Contractor

2.2.1 Penn West Petroleum Ltd.
200, 207-9 Avenue SW
Calgary, AB
T2P 1K3

2.3 Employer(s)

2.3.1 Paradis Pumpjack Maintenance Ltd.
P.O. Box 348
Caroline, AB
T0M 0M0

2.4 Contractor(s)

2.4.1 Alert Safety Services
4312-46th Avenue (West Bay)
Rocky Mountain House, AB
T4T 1A5

2.5 Supplier(s)

2.5.1 Not Applicable

2.6 Worker(s)

2.6.1 Worker 1 (***) (***)
**** ***)
***** ***)
*** ***)

2.6.2 Worker 2 (*****
***** *

*** ***)

2.6.3 Worker 3 (*****
***** *

*** ***)

2.6.4 Worker 4 (*****
*** ***)

*** ***)

2.6.5 Worker 5 (*****
*** ***)

*** ***)

2.7 Others

2.7.1 Not applicable.

SECTION 3.0 DESCRIPTION OF PRINCIPAL PARTIES

3.1.1 Penn West Petroleum Ltd. (Penn West) is one of the largest conventional oil and natural gas producers in Canada. Based in Calgary AB, Penn West operates throughout western Canada on a land base encompassing nearly six million acres, including significant operations within the Crimson Lake area northwest of Rocky Mountain House.

3.1.2 Paradis PumpJack Maintenance Ltd. (Paradis) is a family owned small business based in Caroline, AB, providing pump jack installation, pump jack maintenance, and picker truck services to numerous companies including Penn West. Paradis began working for Penn West throughout the greater Red Deer district in 1999. At the time of the November 25, 2011 workplace fatality, Paradis was an approved vendor under the Penn West Contractor Management system. Paradis last completed a written Contractor Master Services Agreement with Penn West on January 27, 2009.

3.1.3 Alert Safety Services Ltd. (Alert Safety) is a health and safety service company based in Rocky Mountain House, AB. At the time of the November 25, 2011, Alert Safety was providing industrial medical services to Penn West within its Crimson Lake field.

- 3.2.1 Worker 1 (***) commenced employment with Paradis on February 11, 2008 and was working as a labourer on November 25, 2011. He completed the Paradis health and safety orientation process on February 15, 2008. He last completed the Penn West health and safety orientation process on January 26, 2010.
- 3.2.2 Worker 2 (*****) commenced employment with Paradis in 2005 and was working as the crew foreman and picker truck operator on November 25, 2011. He completed the Paradis health and safety orientation process on March 1, 2009. He last completed the Penn West health and safety orientation process on December 10, 2009.
- 3.2.3 Worker 3 (*****) commenced employment with Penn West in 2008 and was working as a field operator in the Crimson Lake area on November 25, 2011.
- 3.2.4 Worker 4 (*****) commenced employment with Penn West in 2008 and was working as a field operator in the Crimson Lake area on November 25, 2011.
- 3.2.5 Worker 5 (*****) commenced employment with Alert Safety in 2007 and was working as a contracted industrial medic for Penn West in the Crimson Lake area on November 25, 2011. She had been employed as an emergency medical responder since 2000.

SECTION 4.0 LOCATION OF INCIDENT

- 4.1 The incident occurred at the Penn West Satellite 33 LSD 04-04-043-08W5 (**04-04**) oil well lease site located approximately 33 km northwest of Rocky Mountain House, AB. (See **Attachment A-Map, Attachment B-Photographs 1, 2**)

SECTION 5.0 EQUIPMENT, MATERIAL AND OBSERVATIONS

5.1 Equipment and Material

- 5.1.1 American Manufacturing Company
November 1967 C-114-143-64 conventional oil well pump unit (pump jack) equipped with 2 N-Size (709 kg/1560 pounds each) and 2 J-Size (482 kg/1060 pounds each) steel counterweights and removable counterweight perimeter guardrails. [142” (360 cm) long by 20”(51cm) wide by 42”(107cm) high] (See **Attachment B-Photographs 2, 3, 5, 9**)
- 5.1.2 WEG HP-Triple (10-7 ½-5 horsepower) Electric Induction Motor
460 V, 1120 RPM
(See **Attachment B-Photographs 3, 5**)

- 5.1.3 LSD 04-04-043-08 W5 (04-04) Oil Well
Tubing Pressure 935 kPa; Casing Pressure 93 kPa
Oil= 1.58 m³/day; Gas= 0.22 e3m³/day; Water= 0.03 m³/day
(See Attachment B-Photographs 2, 8)
- 5.1.4 GMC C-7500 Tandem Truck (Paradis Unit #***)
Equipped with VIVA Model 723 (7 Ton) Articulated Boom (Picker Truck)
Serial *****; Plate ** *****
(See Attachment B-Photographs 2, 3)

5.2 Observations

- 5.2.1 The ambient weather conditions recorded at the nearest Environment Canada weather station (Rocky Mountain House) confirmed, at the time of the November 25, 2011 incident, it was partly sunny with an ambient temperature of approximately 0°C with winds of approximately 30 km/hr.
- 5.2.2 The 04-04 lease site was snow covered at the time of the November 25, 2011 incident. (See Attachment B-Photographs 2, 3)
- 5.2.3 The Paradis picker truck was positioned to the east side of the pump jack with the cab of the truck facing towards the lease entrance. It was connected to the south (rear) counterweight of the pump jack by means of a steel chain and was supporting the counterweights at angle of approximately 20° from the vertical. (See Attachment B-Photographs 2, 3)
- 5.2.4 The pump jack counterweights had not been secured or otherwise locked out to prevent them from rotating while the workers carried out adjustments to the brake assembly. (See Attachment B-Photographs 3, 4, 5)
- 5.2.5 The pump jack electric induction motor control switch was in the “Tripped” (off) position. No other means of electrical energy isolation was provided for the motor control switch. (See Attachment B-Photograph 7)
- 5.2.6 Numerous hand tools, two hard hats, and a jacket were positioned in the immediate area where Worker 1 (*** ***) had been carrying out adjustments to the pump jack brake assembly. (See Attachment B-Photographs 4, 6)
- 5.2.7 A pair of vise grips was observed attached to the end of the horizontal brake rod within the counterweight guardrail enclosure and near the brake assembly that Worker 1 (*** ***) had been adjusting. (See Attachment B-Photograph 4)

- 5.2.8 Foot prints were observed on the snow covered ground within the counterweight guardrail enclosure in proximity to where the workers had been carrying out adjustments to the brake assembly. (See Attachment B-Photograph 6)

SECTION 6.0 NARRATIVE DESCRIPTION OF THE INCIDENT

- 6.1 On August 2, 2011, Penn West service vendor Wildrose Pumpjack Services Ltd. conducted a bi-annual inspection of the 04-04 pump jack, following their previous inspection and lubrication service of the unit on December 7, 2010.
- 6.2 The August 2, 2011 inspection confirmed heavy wear on the low speed pinion gear, the requirement to replace the right and left high speed bearings, the requirement to install a proper belt guard, and to adjust the pump jack brake which was known to be not working properly and deemed to be unsafe by Wildrose.
- 6.3 Following the August 2, 2011 inspection conducted by Wildrose, a written work order confirming the inspection findings was provided to Penn West. A copy of this work order was subsequently provided to Paradis by Penn West for its pending service work inventory.
- 6.4 On the morning of November 25, 2011, Worker 1 (***) and Worker 2 (*****) were assigned to work for Penn West in the Crimson Lake field. Prior to commencing work, they met with Worker 3 (*****) at the Penn West 10-21 location to participate in the Penn West job hazard assessment and safe work agreement process.
- 6.5 Following a review of the job scope and hazard assessment associated with the pending work to be performed by Paradis at the Penn West 12-28 and 08-29 sites, Worker 3 (*****) issued Penn West Safe Work Agreement (SWA) #321915 to Worker 1 (***) and Worker 2 (*****).
- 6.6 SWA #321915 specified moving parts/equipment and pinch points as potential hazards, with control measures to include Lock and Tag-Zero Energy, and to stay clear of pinch points. Worker 3 (*****) also specified on SWA #321915 that the Paradis crew was expected to call Penn West Worker 4 (*****) for other work when they completed their assigned work at the 12-28 and 08-29 sites.
- 6.7 Worker 1 (***) and Worker 2 (*****) left the 10-21 location and proceeded to the 12-28 site, and when finished their work at the 12-28 site, proceeded driving to the 08-29 site.

- 6.8 At approximately 11:30 a.m., Worker 1 (***) and Worker 2 (*****) encountered Worker 4 (*****) near the 04-32 site where he had been working. Worker 4 (*****) assigned Worker 1 (***) and Worker 2 (*****) additional work at the 12-31 and 07-24 sites. These additional locations were recorded by Worker 2 (*****) on the existing Penn West SWA #321915 issued earlier that morning.
- 6.9 Worker 1 (***) and Worker 2 (*****) travelled to and completed their additional assignments at the 12-31 and 07-24 sites. At approximately 2:00 p.m., Worker 1 (***) and Worker 2 (*****) left the 07-24 site.
- 6.10 As there was still approximately 2 hours left in their work day, Worker 1 (*****) and Worker 2 (*****) reviewed pending work orders and decided they could complete the work order for the 04-04 site which involved repairing the pump jack brake assembly.
- 6.11 Upon arriving at the 04-04 site, Worker 2 (*****) attempted to reach Worker 4 (*****) by cellular telephone but was not able to reach him due to poor cellular reception in the area.
- 6.12 At approximately 2:30 p.m., Worker 1 (***) and Worker 2 (*****) positioned the picker truck on the east side of the pump jack with the cab of the vehicle pointing towards the lease entrance. **(See Attachment B-Photograph 2)**
- 6.13 Worker 2 (*****) shut off the power switch to the pump jack motor located at the rear (east) of the pump jack and tried to apply the brake. The brake did not function properly and required repair as noted on the Wild Rose work order. **(See Attachment B-Photographs 3, 5, 7)**
- 6.14 The pump jack counterweights continued to rotate under mechanical inertia until coming to rest in an elevated position above the area where the workers would be positioned while carrying out their adjustments to the brake. **(See Attachment B-Photograph 9)**
- 6.15 Worker 1 (***) entered the counterweight guardrail enclosure on the north side of the pump jack and proceeded to disconnect the horizontal brake rod from the transfer shaft while kneeling on the concrete pad and facing the pump jack below the elevated north counterweight. **(See Attachment B-Photographs 3, 4, 6, 9)**
- 6.16 Worker 2 (*****) entered the counterweight guardrail enclosure on the south of the pump jack, and was kneeling on the concrete pad and facing the pump jack below the elevated south counterweight. **(See Attachment B-Photographs 8, 9)**

- 6.17 While Worker 1 (***) and Worker 2 (*****) continued adjusting the horizontal brake rod and transfer shaft assembly, the unsecured counterweights gradually started slowly rotating in a downward direction. **(See Attachment B-Photographs 4, 9)**
- 6.18 When the counterweights reached a position of approximately 90° (3:00) from the vertical top center (12:00) position, the counterweights fell quickly towards the bottom (6:00) center position. **(See Attachment B-Photographs 3, 6, 9)**
- 6.19 While kneeling below the elevated south counterweight and facing Worker 1 (*****), Worker 2 (*****) noticed that the counterweights had started to rotate downwards in his direction. He managed to avoid being struck by the south counterweight by rolling away from the pump jack and under the bottom rail of the south counterweight guardrail enclosure. **(See Attachment B-Photograph 8, 9)**
- 6.20 Worker 1 (*****) was not immediately aware that the counterweights had started to rotate downwards in his direction. As the counterweight struck him he became trapped between the inner and bottom surfaces of the north counterweight and the pump jack reducer pedestal and the concrete base. **(See Attachment B-Photographs 2, 3, 6, 9)**
- 6.21 Upon realizing that Worker 1 (*****) was crushed by the north counterweight, Worker 2 (*****) rigged the picker truck to the south counterweight using a steel chain and lifted the counterweight off of Worker 1 (*****) using the picker truck. **(See Attachment B-Photographs 2, 3, 6, 8)**
- 6.22 After lifting the counterweight off of Worker 1 (*****), Worker 2 (*****) rolled Worker 1 (*****) under the north counterweight guardrail enclosure to a supine position on the ground approximately 3 feet from and parallel to the pump jack concrete base. **(See Attachment B-Photographs 2, 3, 9)**
- 6.23 Worker 2 (*****) did a first aid primary survey of Worker 1 (*****) and upon recognizing the seriousness of his injuries he attempted to initiate a 911 response using his cellular telephone and by using the two-way radio in the picker truck. He was not successful in reaching anyone by cell phone or radio.
- 6.24 Worker 2 (*****) commenced cardiopulmonary resuscitation (CPR) and artificial respiration (AR) on Worker 1 (*****). While doing CPR and AR on Worker 1 (*****), Worker 2 (*****) observed a vehicle approaching the 04-04 lease.

- 6.25 Worker 2 (***** *****) ceased performing CPR and AR on Worker 1 (*** *****) and approached the vehicle and requested that the driver hunter (*****) travel back towards the main road to try to initiate an emergency response.
- 6.26 The hunter (*****) left the lease site and travelled towards the main road where he encountered Penn West Worker 4 (**** *).
- 6.27 Penn West Worker 4 (**** *) called 911 while driving to the 04-04 location, and also contacted the Penn West control room requesting that an automated external defibrillator (AED) be brought to the 04-04 site.
- 6.28 At 3:06 p.m. on November 25, 2011, Specialty Medical Services Ltd. received notification of the incident through the 911 system and dispatched an ambulance from Rocky Mountain House to the 04-04 site.
- 6.29 At 3:11 p.m. on November 25, 2011, RCMP Rocky Mountain House Detachment received notification from EMS of a workplace fatality at the 04-04 location and dispatched two officers to the site.
- 6.30 Alert Safety Worker 5 (***** *) heard the radio call requesting that an automated external defibrillator (AED) be brought to the 04-04 site. As she was providing industrial medic services to Penn West at a nearby location, she responded to the 04-04 site.
- 6.31 Upon arriving at the 04-04 site at approximately 3:30 p.m., Worker 5 (***** *) immediately set up her AED and commenced analyzing Worker 1 (*** *****). Worker 2 (***** *) continued with CPR while the hunter (*****) carried out C-spine precautions.
- 6.32 Worker 5 (***** *) continued with a combination of CPR and AR while awaiting EMS.
- 6.33 EMS arrived at the 04-04 site at 3:43 p.m. and continued providing Worker 1 (*** *****) with emergency medical treatments.
- 6.34 At 3:51 p.m. EMS personnel ceased further emergency medical treatment of Worker 1 (*** *****) in accordance with the AHS Traumatic Cardiac Arrest protocol.
- 6.35 The RCMP members arrived at the site at approximately 4:00 p.m. and took photographs of the scene and interviewed Worker 2 (***** *) and the hunter (**** *). The RCMP secured the site pending the arrival of OHS.

- 6.36 OHS attended the scene at 7:20 p.m. and accompanied the RCMP and Medical Examiner during their examination of the deceased worker.
- 6.37 At 8:25 p.m., the Medical Examiner transported deceased Worker 1 (***) to Rocky Mountain House.
- 6.38 At 8:30 p.m. the RCMP transferred authority of the site to OHS.

SECTION 7.0 ANALYSIS

7.1 Direct Cause

- 7.1.1 Worker 1 (***) was fatally injured when he was struck by and crushed under the rotating north counterweight of a conventional oil well pump jack.

7.2 Contributing Factors

- 7.2.1 Prior to carrying out work on the pump jack brake assembly, Worker 1 (***) and Worker 2 (*****) did not properly secure the pump jack mechanical and electrical equipment, or otherwise ensure all hazardous energy at the 04-04 location was isolated (locked out) by activation of an energy-isolating device or devices.

SECTION 8.0 FOLLOW-UP/ ACTION TAKEN

8.1 Human Services, Occupational Health and Safety

- 8.1.1 At 4:31 p.m. on November 25, 2011, OHS received notification of the workplace fatality from the RCMP Rocky Mountain House Detachment.
- 8.1.2 OHS arrived at the 04-04 site at 7:20 p.m. on November 25, 2011 and commenced an investigation into the workplace fatality.
- 8.1.3 On November 25, 2011, OHS issued a Stop Use Order to Penn West on the pump jack involved in the incident, preventing use of the pump jack until directed otherwise by OHS.
- 8.1.4 On November 26, 2011, OHS seized equipment, tools, personal protective equipment and clothing from the area where the Paradis workers had been working when the incident occurred.
- 8.1.5 On November 29, 2011, OHS re-visited the 04-04 incident site and seized additional equipment and tools after taking additional photographs and measurements of the site.

- 8.1.6 On December 12, 2011, OHS issued to Penn West a Section 19 OHS Act Order requiring the submission of production and technical data respecting the 04-04 well.
- 8.1.7 On December 15, 2011, OHS lifted the November 25, 2011 Stop Use Order allowing Penn West to fix the malfunctioning pump jack brake and to operate the pump jack to stabilize well pressure, to allow OHS consultant DanMar Consulting Inc. to assess the pump jack during operation.
- 8.1.8 On December 15, 2011, OHS seized additional tools and equipment from Paradis and Penn West.
- 8.1.9 On February 21, 2012, OHS returned to Penn West the pump jack brake components seized from the 04-04 site on December 15, 2012.
- 8.1.10 On February 23, 2012, OHS issued to Penn West a Section 19 OHS Act Order requiring the submission of documentation in support of the OHS investigation.
- 8.1.11 On February 23, 2012, OHS issued to Penn West a Section 19 Order requiring Penn West to prepare a report outlining the circumstances of the November 25, 2011 workplace fatality, and to provide a copy of the report to OHS.

8.2 Industry

Penn West

- 8.2.1 On November 26, 2011, Penn West directed Paradis to return to Penn West all pending work orders for the Crimson Lake and Leafland fields, and suspended Paradis as an approved vendor pending completion of a health and safety vendor evaluation of Paradis by Penn West.
- 8.2.2 On December 15, 2011, Penn West provided OHS with production and technical data respecting the 04-04 well.
- 8.2.3 On December 15, 2011 and January 5, 2012, Penn West repaired the malfunctioning pump jack brake and provided technical and operational assistance to OHS during the assessment and testing of the 04-04 pump jack by OHS consultant DarMar Consulting Inc.
- 8.2.4 On January 10, 2012, Penn West conducted a health and safety vendor evaluation of the Paradis health and safety program, resulting in an overall rating of 51%.

- 8.2.5 On February 28, 2012, Penn West removed Paradis from its approved vendor list preventing Paradis from working for Penn West until Paradis had addressed the findings of the evaluation and a third party evaluation was conducted to confirm Paradis has implemented their improvement actions adequately.
- 8.2.6 On March 19, 2012, Penn West submitted to OHS a copy of its investigation report respecting the November 25, 2011 workplace fatality.
- 8.2.7 On March 19, 2012, Penn West submitted to OHS documentation in support of the OHS investigation into the November 25, 2011 workplace fatality.

Paradis

- 8.2.8 On December 1, 2011, Paradis provided to OHS copies of the November 2011 safe work agreements issued to Paradis by Pennwest.
- 8.2.9 On December 1, 2011, Paradis provided to OHS a copy of its health and safety manual.
- 8.2.10 On December 1, 2011, Paradis provided to OHS a copy of its Unit #*** pump jack work procedure manual.

8.3 Additional Measures

- 8.3.1 On December 12, 2011, OHS retained DanMar Consulting Inc. to carry out an assessment and dynamometer testing of the Penn West 04-04 pump jack.
- 8.3.2 On December 15, 2011, OHS visited the 04-04 site with DanMar Consulting Inc. to assess and test the pump jack. Dynamometer testing of the pump jack could not proceed until the pump jack was operated for a sufficient period of time to allow well pressure to stabilize.
- 8.3.3 On January 5, 2012, OHS attended the 04-04 site with DanMar Consulting Inc. to complete the assessment and dynamometer testing of the pump jack.

SECTION 9.0 SIGNATURES

ORIGINAL REPORT SIGNED

Lead Investigator

September 18, 2013

Date

ORIGINAL REPORT SIGNED

Manager, Reviewer

September 18, 2013

Date

ORIGINAL REPORT SIGNED

Director Investigation and Mining

September 23, 2013

Date

SECTION 10.0 ATTACHMENTS:

Attachment A

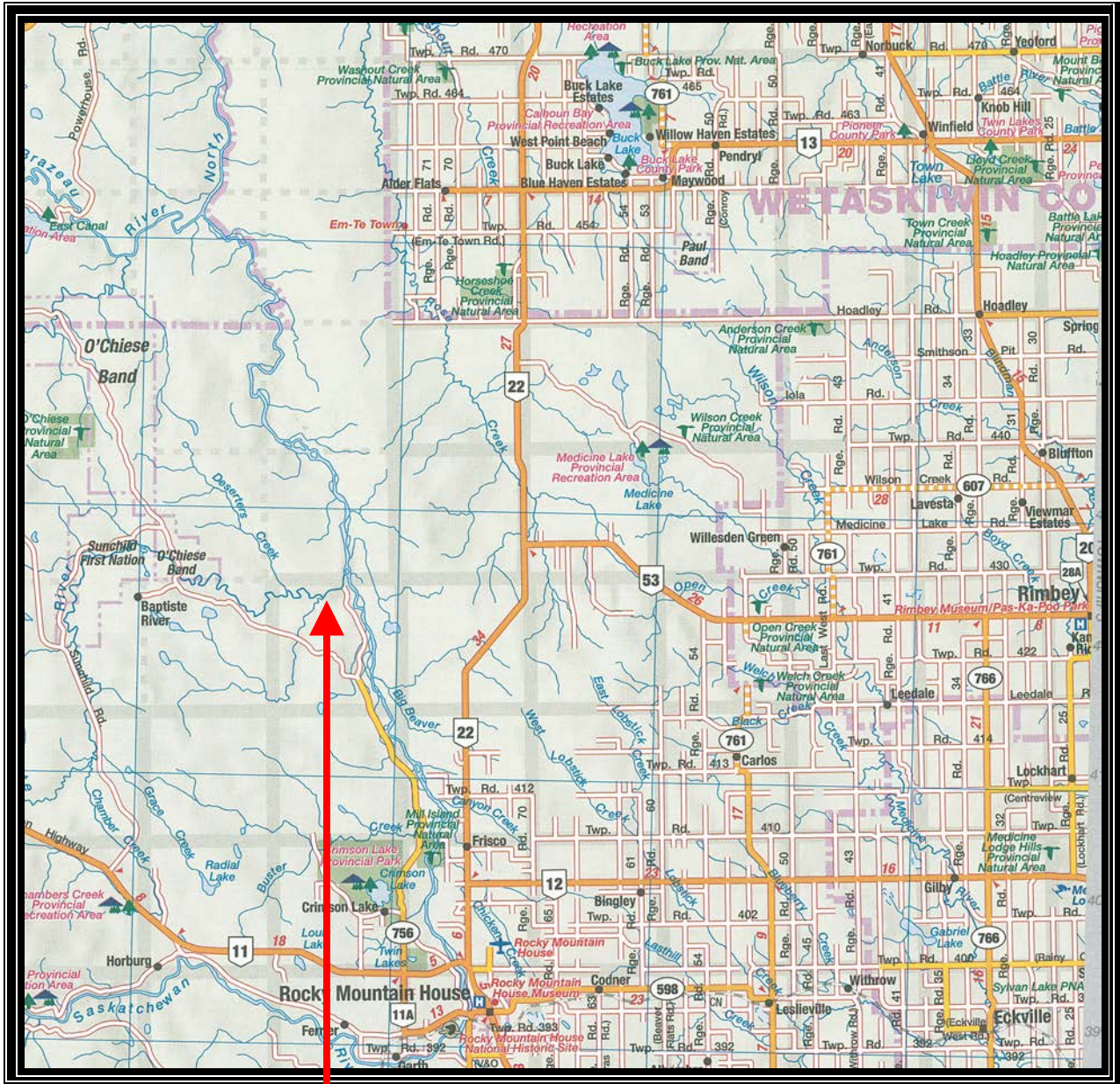
Map

Attachment B

Photographs

Attachment C

Pump Jack Parts Diagrams



Penn West Satellite 33, LSD 04-04-043-08W5 Northwest of Rocky Mountain House

Map – The arrow shows the approximate location of the incident

**Paradis Pump Jack Maintenance Ltd. (Employer)
Penn West Petroleum Ltd. (Prime Contractor)**

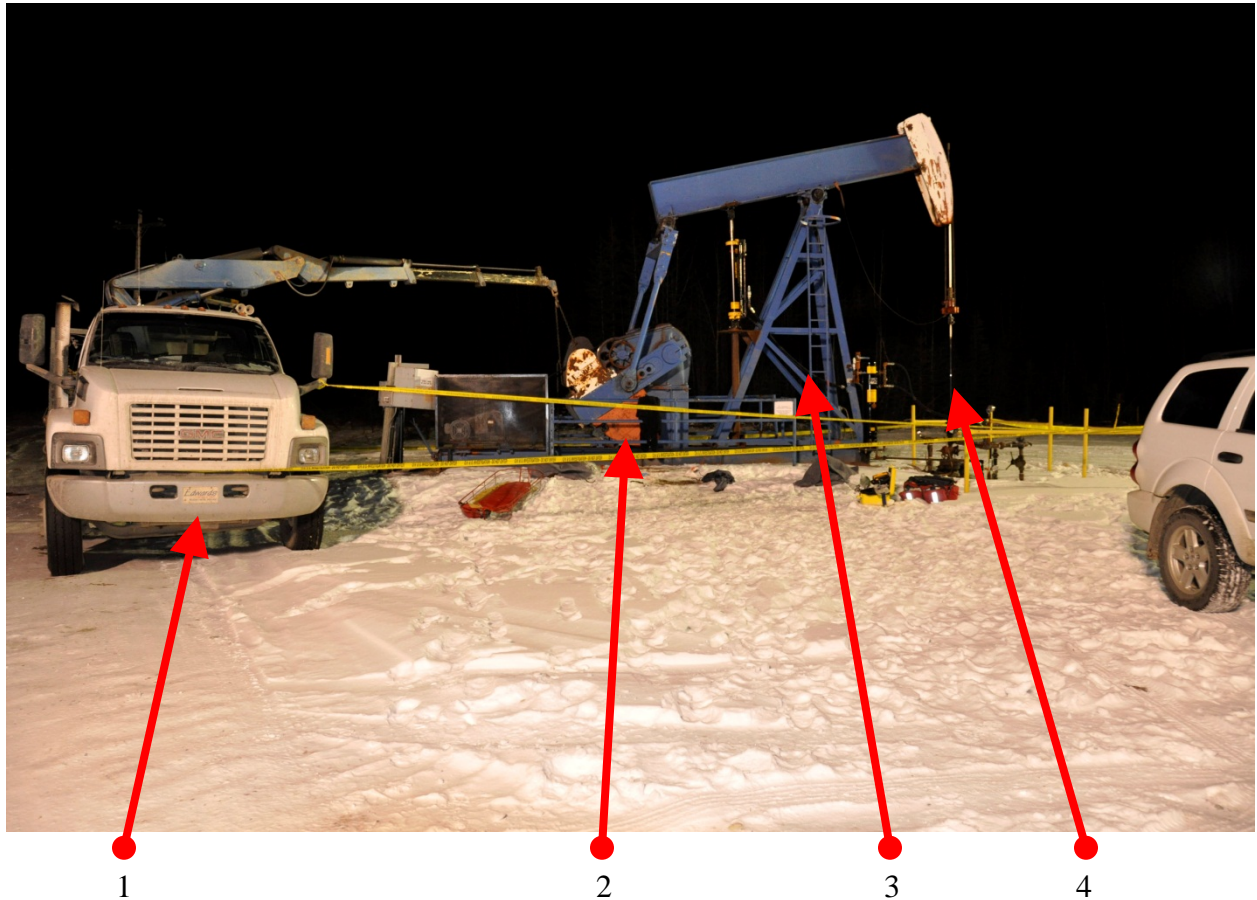
**File: OHS-018583-3342A
Attachment B-Photographs
Photograph 1 of 9**



Penn West Petroleum Ltd. Satellite 33, Crimson Lake field, located approximately 33 km northwest of the Town of Rocky Mountain House.

Paradis Pump Jack Maintenance Ltd. (Employer)
Penn West Petroleum Ltd. (Prime Contractor)

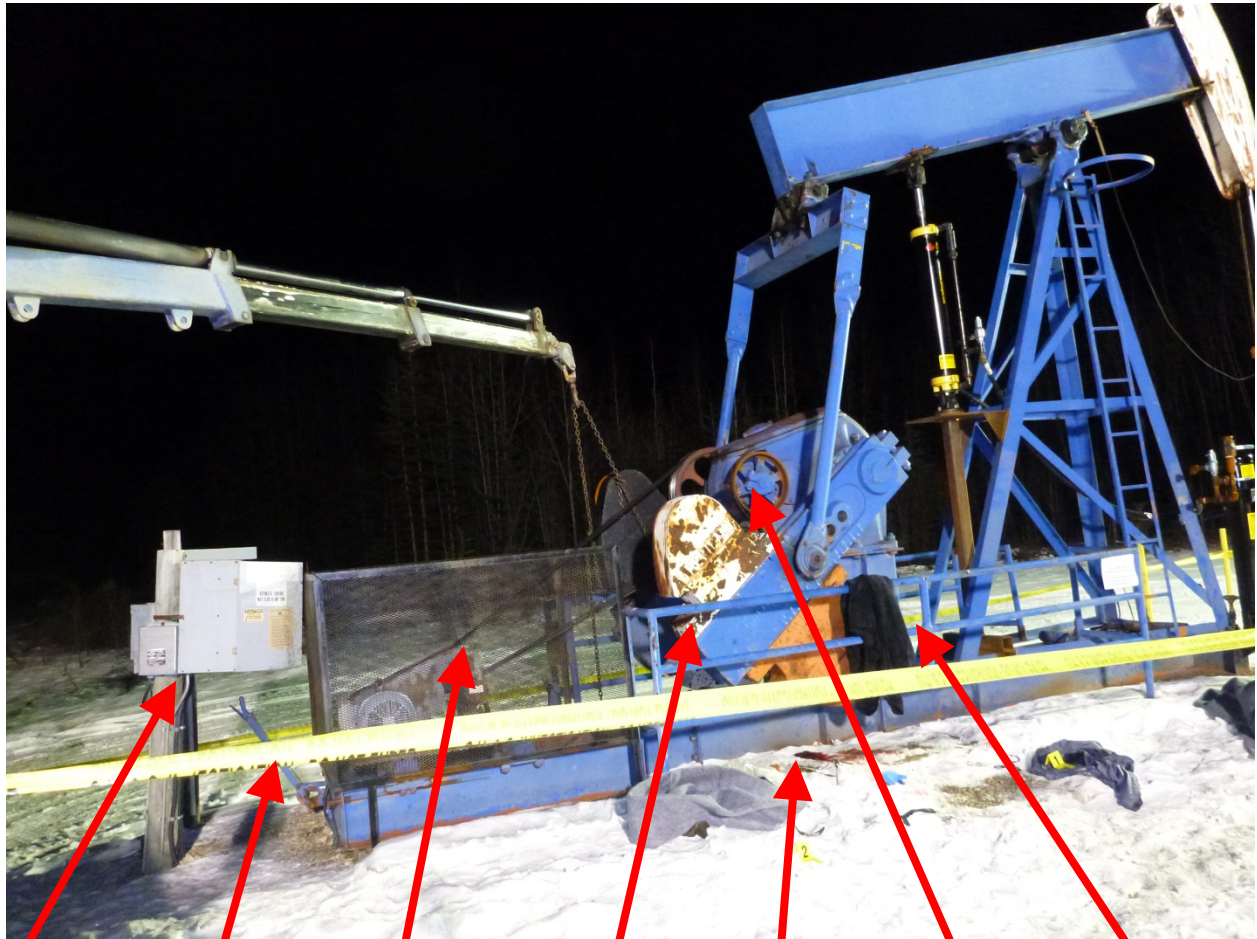
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Attachment B-Photographs
Photograph 2 of 9



- 1. Paradis picker truck connected with a chain to the pump jack counterweights to lift the counterweights off the crushed worker.**
- 2. Position of pump jack counterweights after being lifted off of the crushed worker using the picker truck. (Rotated approximately 30° clockwise)**
- 3. American 114-143-64 conventional pump jack.**
- 4. Satellite 33 Well Head**

Paradis Pump Jack Maintenance Ltd. (Employer)
Penn West Petroleum Ltd. (Prime Contractor)

File: OHS-018583-3342A
Attachment B-Photographs
Photograph 3 of 9



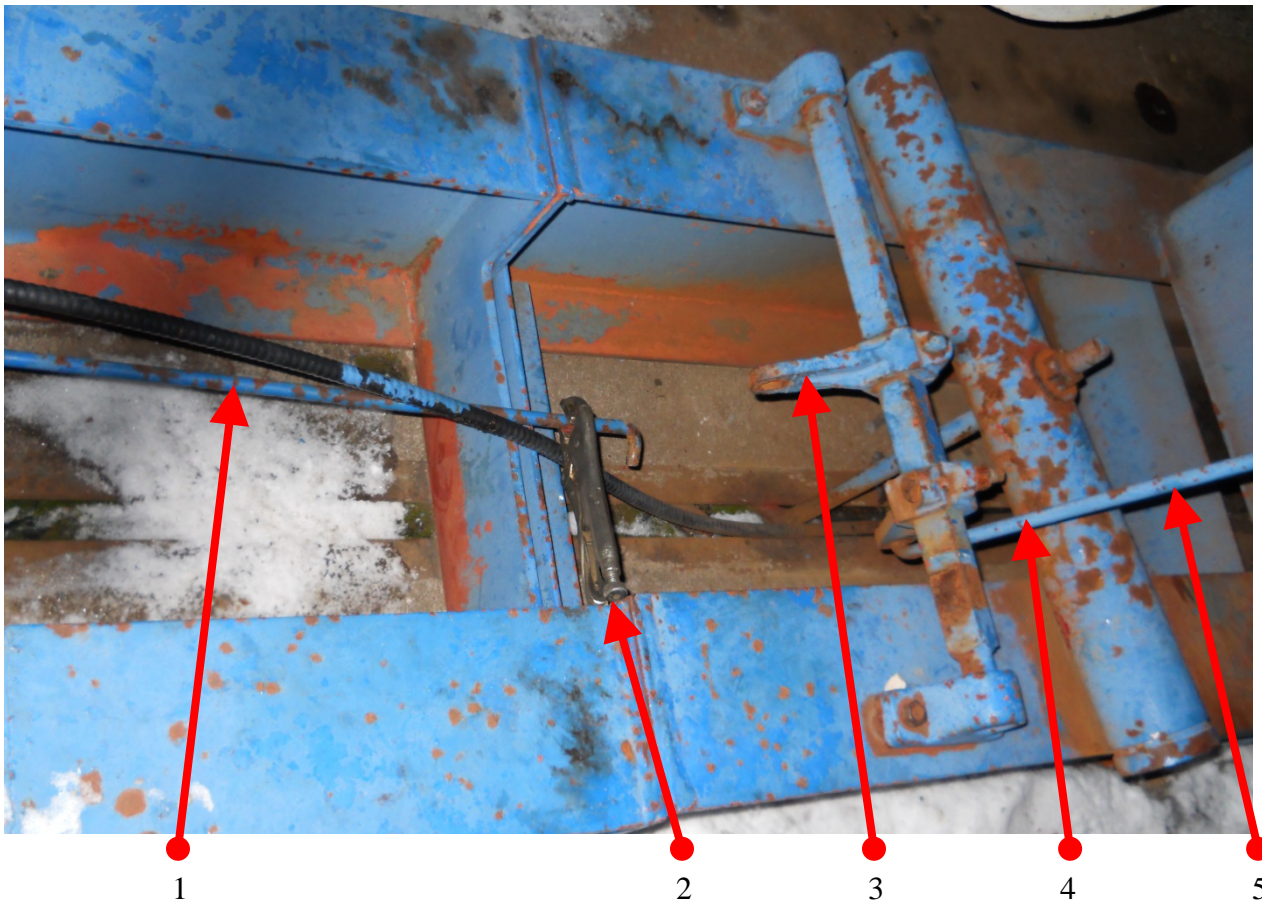
1 2 3 4 5 6 7

American 114-143-64 conventional pump jack details.

- 1. Pump jack motor switch box.**
- 2. Pump jack brake handle.**
- 3. Pump jack electric motor and belt drive system.**
- 4. Counterweights as raised by picker truck to free crushed worker.**
- 5. Impact location where worker was crushed under counterweights.**
- 6. Brake Drum.**
- 7. Counterweight guardrail enclosure.**

**Paradis Pump Jack Maintenance Ltd. (Employer)
Penn West Petroleum Ltd. (Prime Contractor)**

**File: OHS-018583-3342A
Attachment B-Photographs
Photograph 4 of 9**



American 114-143-64 conventional pump jack brake details.

- 1. Horizontal brake rod from brake lever handle to brake transfer shaft.**
- 2. Vise grips being used to rotate horizontal rod to adjust rod length.**
- 3. Connection bracket between horizontal rod and brake transfer shaft.**
- 4. Brake transfer shaft.**
- 5. Vertical brake rod from transfer shaft to brake drum.**

**Paradis Pump Jack Maintenance Ltd. (Employer)
Penn West Petroleum Ltd. (Prime Contractor)**

**File: OHS-018583-3342A
Attachment B-Photographs
Photograph 5 of 9**



Rear View of American 114-143-64 conventional pump jack.

- 1. Lock-out chain installed on counterweight drive sheave following incident.**
- 2. Brake transmission shaft with horizontal brake rod disconnected.**
- 3. Vertical brake rod from transmission shaft to brake drum.**
- 4. Brake drum.**
- 5. Brake lever handle.**

**Paradis Pump Jack Maintenance Ltd. (Employer)
Penn West Petroleum Ltd. (Prime Contractor)**

**File: OHS-018583-3342A
Attachment B-Photographs
Photograph 6 of 9**



1
2
3
Side view of pump jack counterweights showing crushing location.

- 1. Approximate position the worker was kneeling inside counterweight guardrail enclosure while making adjustments to the pump jack brake assembly.**
- 2. Distance between the bottom of counterweight and concrete pad = 3.5 cm.**
- 3. Distance between inner surface of counterweight and pump jack frame = 13 cm.**

**Paradis Pump Jack Maintenance Ltd. (Employer)
Penn West Petroleum Ltd. (Prime Contractor)**

**File: OHS-018583-3342A
Attachment B-Photographs
Photograph 7 of 9**



Pump jack electric motor disconnect switch in tripped position (off).

**Paradis Pump Jack Maintenance Ltd. (Employer)
Penn West Petroleum Ltd. (Prime Contractor)**

**File: OHS-018583-3342A
Attachment B-Photographs
Photograph 8 of 9**



1

2

3

Satellite 33 well head

- 1. Stuffing box.**
- 2. Polished rods.**
- 3. Rear counterweight.**

**Paradis Pump Jack Maintenance Ltd. (Employer)
Penn West Petroleum Ltd. (Prime Contractor)**

**File: OHS-018583-3342A
Attachment B-Photographs
Photograph 9 of 9**



1

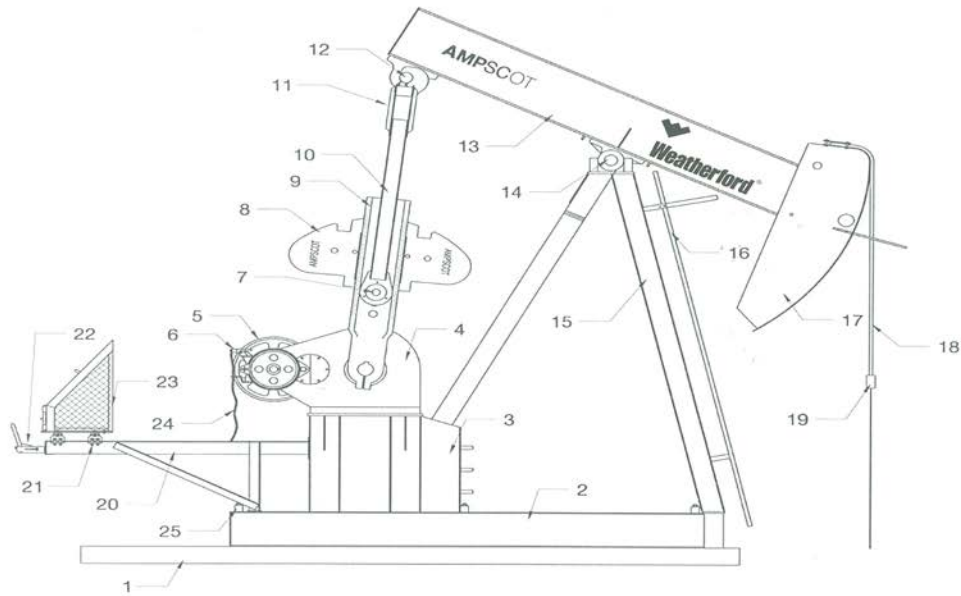
2

3

Approximate position of the unsecured elevated counterweights while Paradis workers carried out adjustments to the pump jack brake assembly.

- 1. Position of Worker 2 (***** *****) within guardrail enclosure under rear counterweight.**
- 2. Position of Worker 1 (***) within guardrail enclosure under front counterweight.**
- 3. Approximate position of unsecured counterweights (not locked out) before they commenced falling under gravity in counter-clockwise rotation.**

PARTS IDENTIFICATION



ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	Concrete Base	14	Saddle Bearing Assembly
2	Frame	15	Sampson Post
3	Reducer Pedestal	16	Sampson Post Ladder
4	Gear Reducer	17	Mulehead
5	Reducer Sheave	18	Wireline
6	Brake	19	Polish Rod Hanger
7	Wrist Pin Assembly	20	Motor Extension
8	Weights	21	Motor Rails
9	Crank	22	Brake Lever
10	Pitman Arms	23	Beltguard
11	Equalizer Beam	24	Brake Cable
12	Tail Bearing Assembly	25	Tiedowns
13	Walking Beam		

Paradis Pump Jack Maintenance Ltd. (Employer)
Penn West Petroleum Ltd. (Prime Contractor)

File: OHS 018583-3342A
Attachment C
Pump Jack Parts Identification
Diagram 2 of 2

